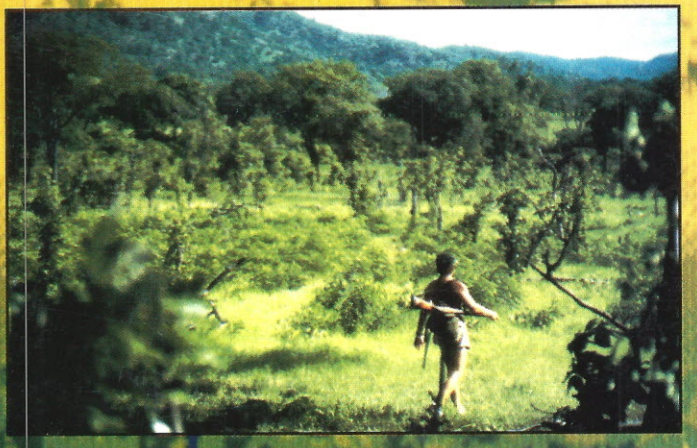
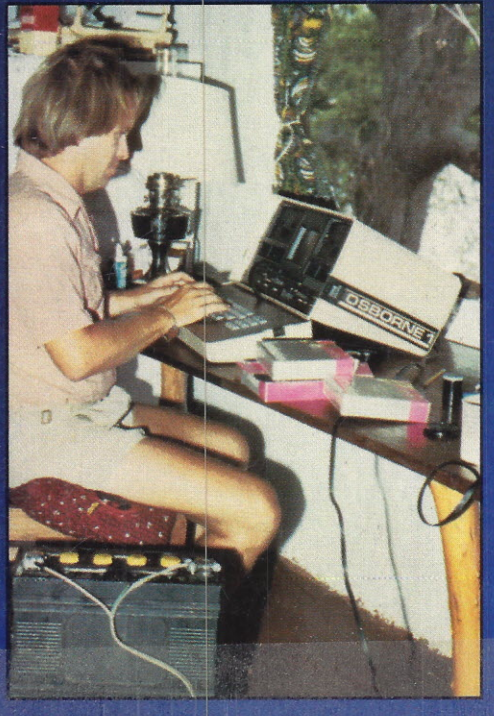
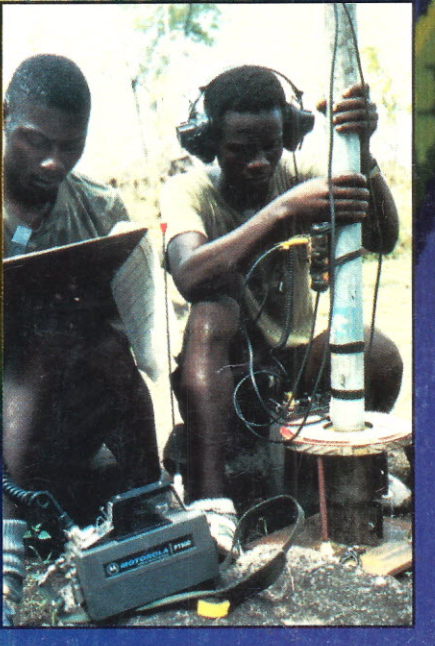
THE PORTABLE Companion

FOR OSBORNE COMPUTER USERS

MAY/JUNE/JULY 1985 #17 (VOL. 4 NO. 3) USA $5.00







In the Field

Osbornes Help Conservation Project In Africa

FOG has been formed as a User's Group for persons using or interested in portable computers and/or the CP/M disk operating system with related software. In December of 1984, there were over 15,000 members from around the world. Most attend local group meetings at over 300 locations.

Computer systems owned or used by members include the Osborne 1 (single and double density), the Osborne Executive 1, all models of the Morrow MicroDecision, the Zorba, all models of the KayPro, several MicroMates, and many more. Special interest groups organized to augment a network of local group meetings include dBase II, Ham radio operators, Personal Pearl.

FOG was started in October of 1981 by a small band of early buyers of the Osborne 1. The primary purpose was to organize a library of public domain software to run on the Osborne 1. A newsletter was quickly started to act as a focal point for the group's activities. The large number of excellent contributions to both the library and the newsletter has produced a library of 260 disks (as of May, 1985) and a nicely typeset (70 or more pages) monthly publication. All back issues of the ***FOGHORN*** are available for a nominal fee which includes shipping in the U.S. Contributions are currently being solicited for bulletin board systems in addition to the thirty currently in operation. Most systems accept both 300 baud and 1200 baud. Phone numbers for the first systems are:

System #1 — Daly City, CA	(415) 755-2030	24hrs/7 days
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Each of these systems will have a file listing phone numbers for the other systems.

While the meetings are organized on a local basis, over 130 of these local groups have joined the FOG network, thus increasing the sharing of information, tips, problems and so on. Those local groups which opt to formally join the FOG network receive a portion of local member dues to assist with the cost of maintaining a local copy of the disk library.

The FOG library is currently maintained on the Osborne 1 single density format but separate libraries are being established for the other computer formats. The library files are carefully screened and divided into category types (utilities, games, applications, and computer languages are the four major categories). Programs which contain run or other errors are put into the hacker section so interested members can fix them and resubmit for inclusion in the correct section. Items which do not fit into one of these categories are in the miscellaneous section. A catalog and descriptions of all the discs is maintained in the library section.

Dues in FOG are $24.00 per year. This entitles each member to a copy of the ***FOGHORN*** each month as well as access to the disk library. Local group meetings are open to the public without charge although access to the disk library is restricted to the membership. The FOG Disk Library contains only public domain software. Piracy (the copying of proprietary software) is strongly condemned.

In the United States, the ***FOGHORN*** is normally mailed by non-profit bulk mail. (FOG is a corporation in the state of California and has obtained its non-profit, tax exempt status from both the state and federal governments.) For those members who live out of the country or who prefer first class delivery of their ***FOGHORN***, additional postage must be added to the annual dues. See the chart below for details.

If you are interested in joining a self-help organization to increase you knowledge and the use of your computer, use the application below (or a copy of it). Generally, memberships received at the FOG office prior to the 15th of the month are entered in time to receive the next month's ***FOGHORN***.

If you know of a local group which might be interested in joining the FOG network, please send all details (meeting dates and places, officers, and how interested local computer owners can join). We will send you an information packet on becoming an Affiliated Member Organization.

For your records, the address of FOG is P. O. Box 3474, Daly City, CA, 94015-0474. Please allow at least two months for the arrival of your first ***FOGHORN*** since bulk mail can take as much as nine weeks. (The post office says that it should only take about three weeks for non-profit bulk mail but some members on the East Coast have experienced longer delays.) A membership card will be processed within two weeks of the receipt of your dues.

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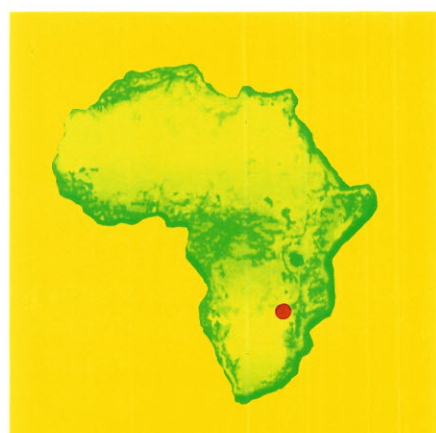
Feature

In the Field: Wildlife Conservation in Zambia

Using Osbornes to monitor elephants and manage wildlife resources in the Luangwa Valley, Zambia, Africa.

Tony Bove & Cheryl Rhodes
Photos by Dr. Dale Lewis, New York Zoological Society

In his first dwelling, a mud-pole house on the banks of the Luangwa, Dr. Lewis uses the project's original Osborne 1 which is connected to a 12-volt car battery powered by solar panels.



To have lived and worked for several years in Zambia, Africa, is a personal revelation of how desperate some countries are in managing important information for their development and well-being. — Dr. Dale Lewis

The Luangwa River meanders through miles of woodlands and floodplains in Zambia, Africa, supporting one of the largest populations of elephants and other wildlife. Dr. Dale Lewis, an American wildlife planner, lived in a thatched mud-pole house on the banks of the Luangwa thirty miles from the nearest all-weather road, sixty miles from the nearest telephone.

The field staff for the Lupande Research Project consists of local Zambian villagers.

When his house was completely destroyed by a fire, he and his wife managed to rescue ninety percent of his research papers and his tan-case Osborne 1. Since the accident, their efforts to get the Zambian government to change its wildlife management policy were successful, and they credit the Osborne 1 for helping them prepare and present the information to the Zambian officials.

Today Dr. Lewis is the proud recipient of a donated Osborne Vixen, which he intends to use in his newly-formed computer center in the Luangwa Valley. His tan-case Osborne 1 is still the workhorse for his wildlife management project, which among other things is trying to save the elephants from extinction.

It is the dream of many researchers, ecologists and students to have an effect on the world, even if only a small part of the world, that would reverse the current trend of species annihilation and the trashing of natural resources.

Dale Lewis is a young American zoologist pursuing his dream of getting local Zambians to manage their wildlife resources. His successes were not inspiring when he realized that no matter how hard he worked, the Luangwa Valley still lost *seventy percent* of its elephant population in only twelve years.

When he left for the bush country years ago, his colleagues speculated that he would be committing "academic suicide" by staying out in the bush for long periods without returning to the academic institutions to do research at their computer centers. But Lewis had no time to waste "commuting" from the bush country to American institutions. Personal computer technology made it possible to bring sophisticated computer hardware and software out to the field stations. Lewis packed his store-bought tan-case Osborne 1 and went off into the Luangwa Valley.

The kind of technology that we take for granted in America, you just can't take for granted in Zambia. You might go one whole week without diesel, or two months without tires. You might not see a bar of soap for about two or three weeks.

Africa is a continent that is losing most of its natural resources quickly. It suffers from extreme famine, over-population, corrupt governments, a high illiteracy rate, and many other problems that are really symptoms of resource abuse. It remains a task of the western world, which in many ways is responsible for planting the seeds of destruction during the colonial era, to supply the technology and expertise to help Africans manage their dwindling natural resources.

Most conservation efforts are directed toward saving endangered species. This is due in part because there are so many species that are endangered, and also because the people who contribute money to conservation efforts are not always aware of other projects.

Lewis and his colleagues have moved away from the conventional ap-

The bush country of the Luangwa Valley, Zambia.

proach of focusing on endangered species. They want to stimulate interest among the many governments in Africa and other continents to look at wildlife and how it can be meaningful to the local people and be part of the solution for community problems.

They are operating in the context of the most intensive aid program the world has ever known. International aid agencies give millions of dollars for agriculture in an effort to combat the African famine. But large-scale agriculture is not the only answer, and many areas cannot support it. Lewis believes that wildlife itself is a renewable resource for economic development that is far greater than agriculture in places like the Luangwa Valley.

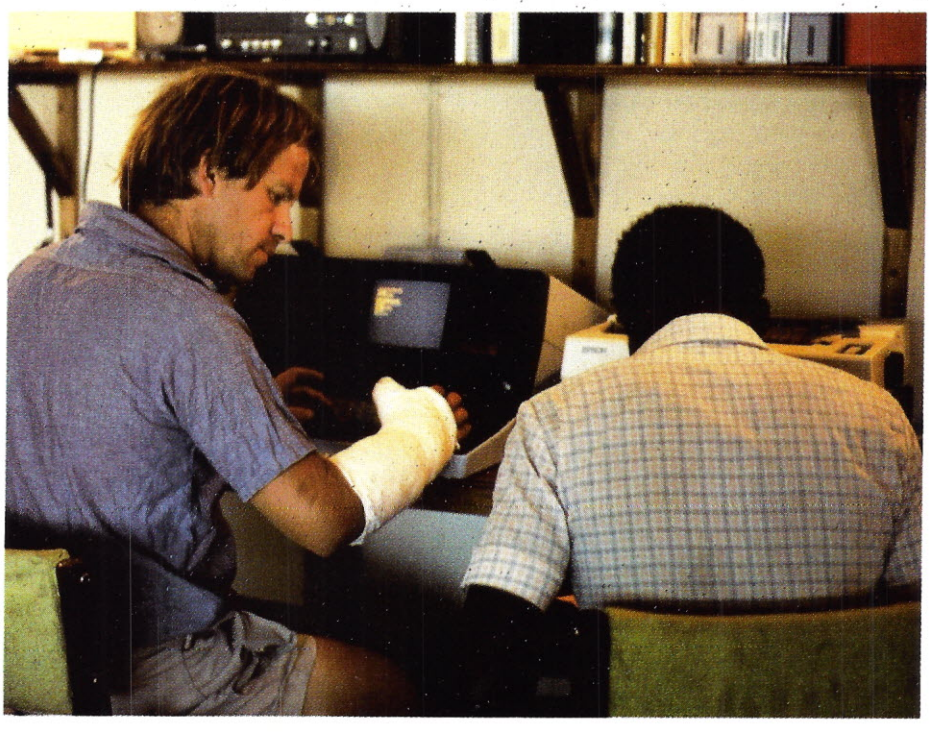
"What really worries me [about aid for agriculture] is that here is an area that is unique, there is no other Luangwa Valley in the world, and no one is taking the time to look at the land and its capabilities. We've done soil studies that indicate that the valley is not capable of supporting a large-scale agricultural system. But wildlife, if managed in the proper way, could survive. So with the Osborne helping us in our studies and information presentation, we've been able to convince some aid agencies that wildlife could be managed as a renewable resource."

The conflict between wildlife and agriculture is likely to increase, as local villagers continue to question why they must tolerate wildlife for the benefit of the tourists. The bitter irony of conservation is that so much of the world's wildlife cannot be adequately protected and managed because of limited foreign exchange in the developing countries where most of the wildlife lives. Zambia, which has over 20% of its land area in national parks (more than the U.S.), has defaulted on its IMF loans — a dilemma that places wildlife conservation in Zambia on an even shakier ground.

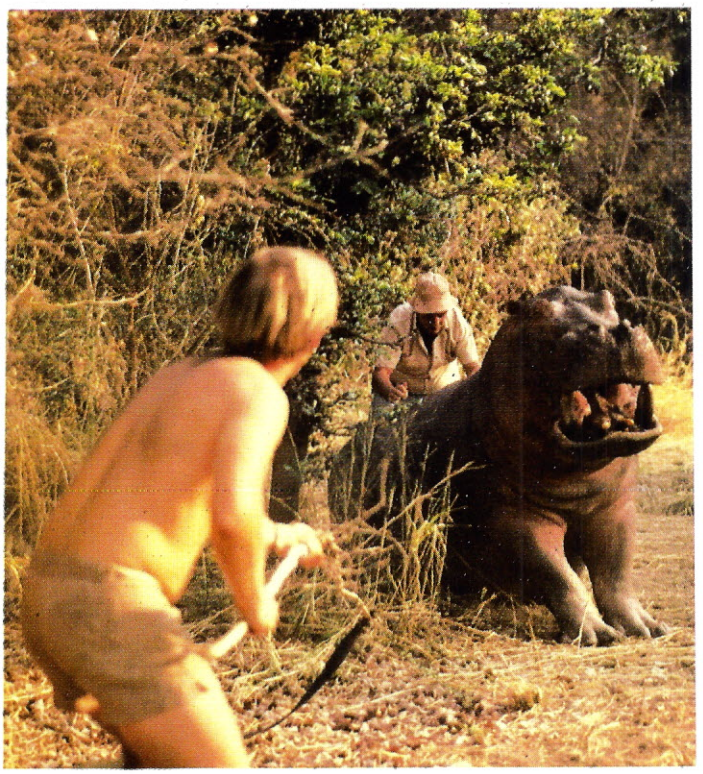
The Lupande Research Project was formed in the Luangwa Valley by Dale Lewis and Gilson Kaweche of the Zambian national park service. Its aim is to find answers to wildlife management problems now threatening Luangwa's future, which holds great promise for Zambia if the right solutions are found.

Dr. Lewis is a member of Wildlife Conservation International's field staff. The WCI is a division of the New York

The Luangwa Valley had lost 70% of its elephant population in only twelve years.



Entering data on elephant positions in the Luangwa Valley in Zambia. Willy calls out the data while Dr. Lewis uses dBASE II.



Above: *Before collecting data via radio tracking, Dr. Lewis has to "collar" this partially-tranquilized bull hippo with radio-transmitter collars.*

Left: *Continuous radio-tracking of elephants and hippos generates a great deal of data.*

Zoological Society. The project is entirely funded by the NY Zoological Society and a local sponsor (Loggie Investments of Zambia). The parent institution is the National Parks and Wildlife Service of Zambia, which provides the links to the Zambian government. Through these communications links Lewis and Kaweche can provide information to high officials in the Zambian government.

Their efforts paid off recently when the government approved a major change in wildlife policy. Lewis attributes the success to the improved research facilities (mostly the Osborne computers and software) and the well-trained Zambian staff. The Osborne helped the staff compile data to pinpoint the problems with existing land-use policies and provide status reports on various wildlife species and plant communities in the Luangwa ecosystem. The research facilities (including the new computer center consisting of one Osborne computer) helped bring about an "unusual working relationship" between field research people and government policy makers.

Under the auspices of the NY Zoological Society they can also provide information to aid agencies that can influence their decisions. Prior to the Lupande project several aid agencies were vigorously pursuing major agricultural goals in the Luangwa watershed. As a result of the lobbying efforts of Lewis and others, these agencies are considering and in some cases adopting wildlife as a resource that deserves at least equal status with agriculture.

"I've had to write many proposals," says Dale Lewis about his efforts to influence the decisions of international aid agencies. "Over the weekend I had to write one for a Norwegian aid society. The Osborne was indispensable — with my research data I presented a good case. This is how I get my reward: in a few years we might be able to save this valley."

"You can't preach conservation, but if you can add an economic incentive then you can win local support for conservation."

The Luangwa Valley is a huge, sprawling wilderness of bush country and forests. The escarpment walls of the valley are more than fifty miles across and the length of the valley floor is over 200 miles. The valley has several parks, and some 30,000 elephants

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A GOOD READ

■ **Hypergrowth, The Rise and Fall of Osborne Computer Corporation by Adam Osborne.** Learn what really happened at Osborne Computer Corp: Was the Executive really announced too early? (p. 118). Why does Osborne think highly of OCC's new management? (p. 157). What was Apple's Steve Jobs' emotional reaction to O1's pricing? (p. 24). Did Kaypro conspire to thwart OCC's financing? (p. 100). This book is so controversial, Osborne had to print it himself. Through a special arrangement with Adam, we make it available for $19.95 or $14.95 with any order.

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move in and out of them, sometimes contacting people.

But the valley is losing elephants at the rate of three to five *a day* to poaching. Hunters are still illegally shooting elephants for the ivory tusks. Rhinos are also on the verge of extinction thanks to large scale commercial poaching (rhino horns).

Lewis arrived in 1979 with one field assistant, a few bicycles, binoculars, notebooks and a pocket calculator. They were immediately aware of conditions influencing elephant movements

The Osborne made it possible to correlate data in different files and do statistical analysis in their mud-pole hut on the riverbank.

and calving rates, such as gun disturbances (both legal and illegal), the dry season over-grazing of certain areas that contributed to a loss of woodlands, and the classic elephant management problem: increased grassland and lowered tree diversity.

Lewis came back in 1982 with an Osborne 1 computer and a land rover. The Osborne made it possible for him to correlate data in different files and do statistical analysis in his mud-pole hut on the riverbank.

"We were able to show that animals rotate seasonally in and out of particular habitats. We could show that when you remove gunshot disturbances [safari hunters, local hunters and illegal poachers], there is a very significant shift in elephant positions in the dry season. When you remove that disturbance, they move onto a river floodplain. Their feeding habits change dramatically from day to night. During the day, when there were disturbances, the elephants would move into the park, and concentrate on the west bank.

"We were able to monitor the elephants' positions, and by burning ground cover, we could remove the

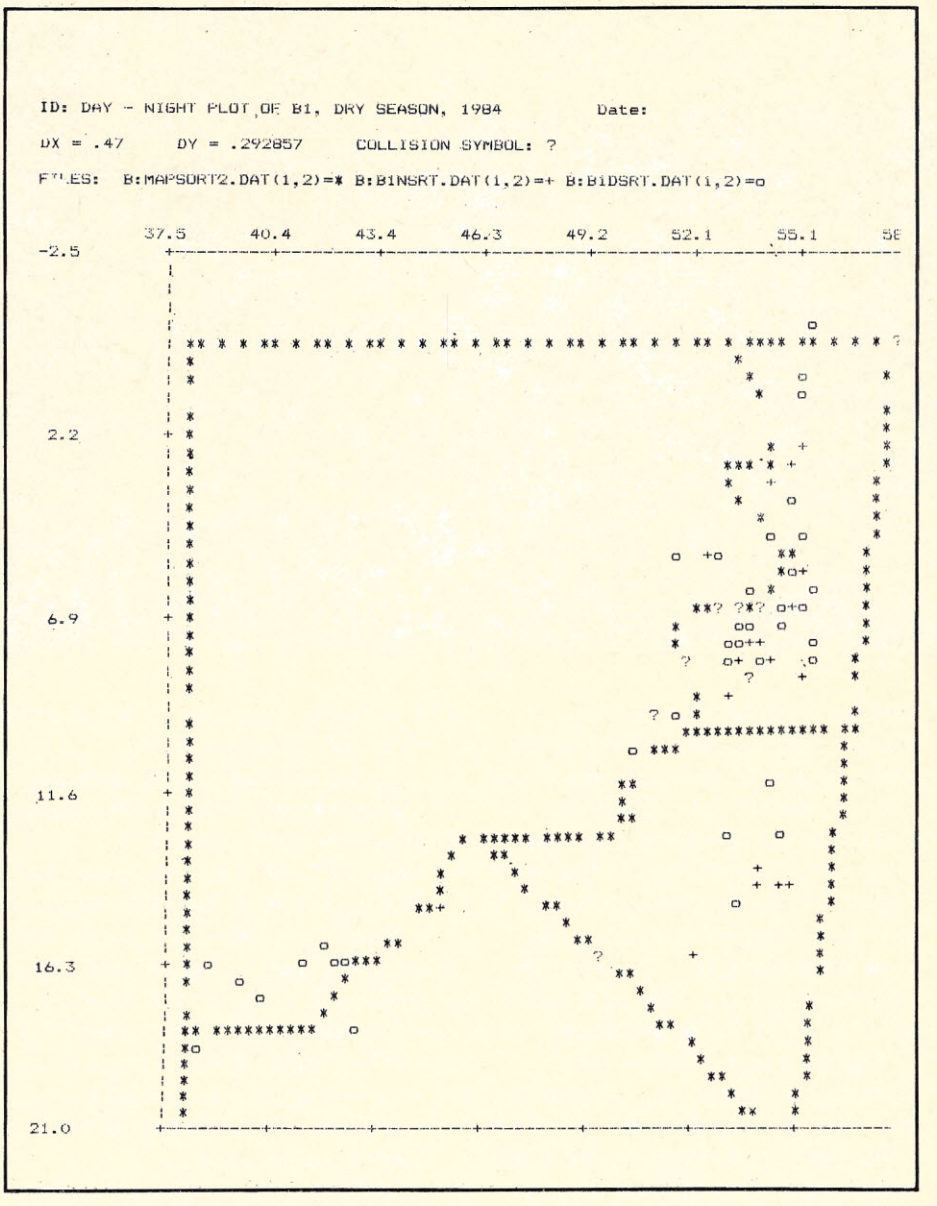


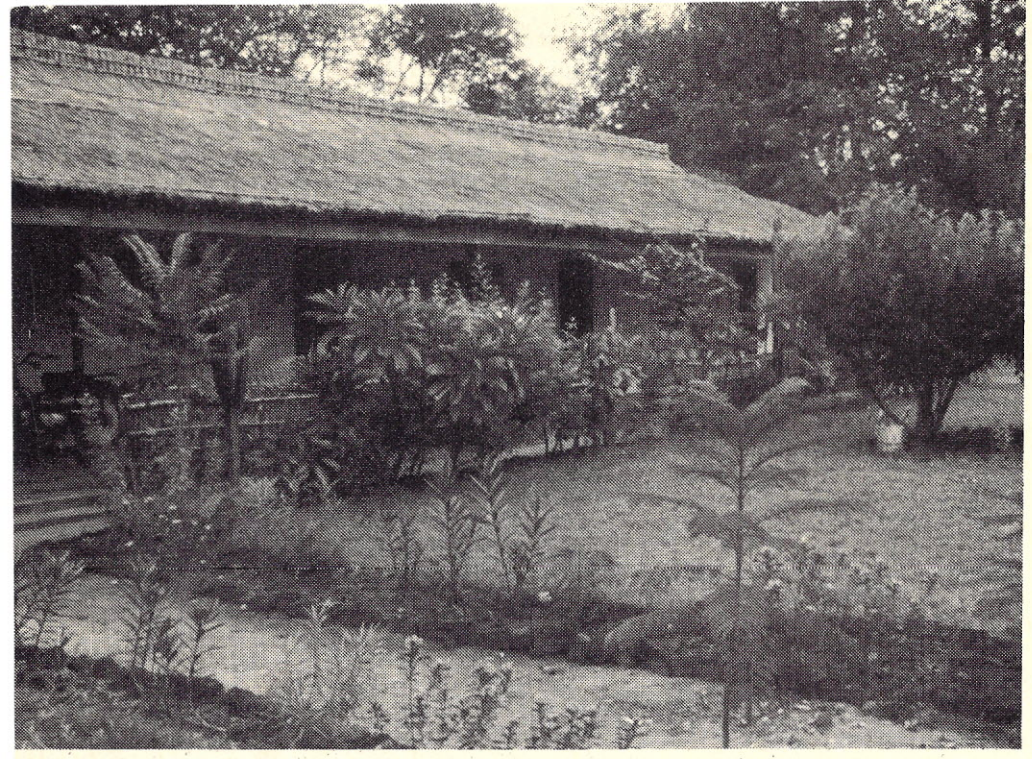
Figure 1. *An Osborne-generated plot of the positions of elephant B1 during the dry season. The "o" symbols mark daytime positions and the "+" symbols mark nighttime positions. The triangular area marks a special vegetation study area; the long twisting line of asterisks running diagonally represents the Luangwa River.*

grass [which is a diet the elephants utilize during the dry season] but not damage the trees, thereby influencing the elephant's movement. We have been able to encourage elephants to move onto this floodplain, lowering the disturbance and pressure of elephant overbrowsing on the east bank."

Lewis and his assistants go out every year and measure trees and stems and see how much "elephant damage" there is. "We know we can manage elephants by controlled ground burning, controlling the disturbances outside the park, and rehabilitating the woodland habitats in the park."

"All this," he added, "could not have been done without an Osborne." Lewis considers personal computers to be essential for wildlife research. He hopes that the BASIC programs they wrote for helping in wildlife management will become fundamental tools for managing wildlife resources in Africa.

"I'm very sympathetic to the researcher who wants to remain out in the



The modern field station office.

bush but feels the need to go back to the university, but the only reason he has to go back is to use the computer to compile research data. With the Osborne in the field we can stay out there and gather information first-hand and cross-correlate it immediately. It gives field researchers the power to know the meaning of the information and form the right questions, to know what to look for in the wilderness."

Dale Lewis and his wife, Julia Nagata-Lewis (a wildlife artist), occupied a small mud-pole thatched-roof hut with a bed in one corner, several chairs, and a long desk overlooking the river with the Osborne and research files. To provide power for the Osborne they used solar panels to charge a 12-volt car battery, which they substituted for the battery supplied with the COMM-PAC power pack. They used a gasoline generator to power the Epson printer.

In this romantic setting (geckos — little lizards — running up and down the walls) Dale and Julia lived and worked, until one night Dale went outside to refuel the gas generator, and somehow spilled gasoline near a kerosene lantern. The fumes spread quickly and in an instant a flash fire started. Dale was inches away from being burned alive.

Julia had already gone to bed; she ran out of the hut naked, and with Dale tried to maneuver the container of gas out from under the house, but in a flash the whole house was on fire.

Julia, who had on some occasions complained about Dale's using the computer too much, shouted "The Osborne!" and went tearing into the burning house, grabbed the computer and came out with it, still naked; Dale was behind her and grabbed his disks and boxes of papers, and got about ninety percent of it. By that time the fire had engulfed the mud-pole house, and big clumps of grass were breaking away from the roof in balls of flame. It turned into an inferno.

Julia found some blouses hanging on a line and made a skirt out of one of them. They lost everything else they had, but they rescued the Osborne and most of the research.

With the help of the local villagers and sympathizers, they built a new house to serve as a field station. They now use a diesel generator for the Osborne and the Epson printer.

Using an Osborne to count elephants? Wildlife conservation efforts in Africa cannot afford the luxury of time to focus on elephants alone. Preserving a habitat or species in Africa is more a management problem than a scientific one, since the well-being of wildlife areas depends on the role of its protectors: humans.

The computers serve the researchers well in the task of correlating data and preparing reports quickly. The computers are used to organize the data and produce reports and graphs based on statistical analysis. They are also used to present the results to Zambian officials, and to prepare reports for the Zambian government and international aid agencies.

They are now monitoring an area within the valley that is a cross-section of the various soil types representing the major types of vegetation. The area is bounded by tracking towers, from which they monitor three species: elephant, hippo and buffalo. Lewis employs local Zambians who spend four days and nights up in towers radio-tracking the animals. Most of the work

The computer center in the Zambia National Parks office.

is data gathering, measuring tree and grassland productivity and the effects of grazing.

Data on every type of plant and animal is collected and typed into the Osborne. The area is mapped onto a grid of coordinates for the purposes of specifying the locations of elephants, hippos, buffaloes, soil types, shrubs, trees, grasses, and so on. Each cell on the grid corresponds to an area 1/64th of a square kilometer.

Each elephant, hippo and buffalo is assigned a frequency; B1 (figure 1) is the name of an elephant they've been tracking for three years. The o symbols are daytime positions, and the + symbols are nighttime positions. The map shows an intensive study area where a vegetation survey was carried out.

Their accuracy on elephant positions is within two hundred meters. They use a statistical package (from Northwest Analytical, address given at end of article) for correlating preferences of various types of habitat that elephants have for each of the seasons. That's one use of the computer: to identify preferred positions. Another is to identify patterns within seasons.

The maps show where the elephants were before and after the ground cover burns. They burn the ground cover in an experimental area, and leave a control area unburned. The researchers can demonstrate historically that elephants move fairly evenly throughout the area, so that they can tell that when they burn, there is a change of elephant movements in relation to the burning of ground cover.

The statistical software tests to see if the elephants show a preference for the unburned areas as opposed to the burned areas. They use dBASE II for the data entry, then convert the dBASE file into a BASIC data file for use with Lewis' set of MBASIC programs.

Lewis wrote a set of programs in MBASIC to interrelate data from several files. For each cell there are seven parameters that are correlated with animal movements. For example, at a particular daytime position of an elephant, Lewis wants to know for that position what its soil type is, the type of trees in that particular cell, the grasses, the tree density, and other things.

"There are two kinds of data we work with," Lewis explains. "We use a large data set that we know is drawn randomly and fits a certain kind of distribution; these are called *parametric* statistics. There are well over 50 statistics you could use — correlations, regressions, multiple step-down regressions, and so on.

"We also use *non-parametric* statistics where we're dealing with a small sample size; here we're comparing the data against a given distribution, and we want to see if the data fits, and we do statistical tests to see if it does fit. Also, we're looking at distributions of animals and we want to see if they're random or not, or if they consistently fit a particular pattern, or if they are associated with a certain type of plant or not, and so on.

One program Lewis wrote (in MBASIC) is an animal simulator he calls The Muncher. They defined The Muncher from characteristics taken from real animal studies. The Muncher can be defined as, for example, an animal that feeds on trees, and the program can simulate the environment. From this simulation Lewis can see how the environment is affected and how animals like the Muncher and the plant life can coexist — some trees respond with five thousand seeds, others respond with twice as many, etc.

Lewis explains the simulation as "an exercise in determining the right questions to be asking in order to do better research. It is a management-oriented simulation to help a researcher bring the proper questions out to the field."

The research team uses a statistical software package that runs on the Osborne. The Northwest Analytical package also produces graphs with x-y coordinates for use in presentations.

"This is why researchers depended so much on universities and institutions and their computer centers," said Lewis. "Now researchers can be a little bit more independent and have good statistical software on their in-field computers. We've pretty much created our own institution on the banks of the Luangwa!"

The New York Zoological Society is keeping in step with the times — they have Osbornes at the Bronx zoo (in offices, not in cages), so that Lewis and

To contribute to the wildlife conservation efforts of the New York Zoological Society, write to:
Wildlife Conservation International
New York Zoological Society
Bronx Zoo
Bronx, NY 10460

To write to Dr. Dale Lewis:
Dale M. Lewis, Ph.D.
c/o Nyamaluma Camp
P.O. Box 18
Mfuwe, Zambia

The hardware and software described in this article runs on the Osborne 1, Executive, and Vixen:

Statistical Package
Northwest Analytical
1532 SW Morriston St.
Portland, Oregon 97205

Rembrandt
Osboard & Osgraph
Spectre Technologies Inc.
22458 Ventura Blvd., Suite E
Woodland Hills, CA 91364

Star Micronics
200 Park Avenue
New York, NY 10166

Epson America Inc.
2780 Lomita Boulevard
Torrance, CA 90505

Lemon Spike Protector
Electronic Protection Devices, Inc.
P.O. Box 673
Waltham, MA 02254

his staff can send Osborne disks with data to the Society directly.

A gecko scampers up the wall, mosquitos hover noiselessly in the night, several ants peek out from underneath the keys of the Osborne computer. It gets very hot — they recorded up to 118°F. — and it varies from extreme dryness to extreme, almost 100% humidity.

When the humidity is high they keep the Osborne in a plastic bag. The house has no windows, just open air; during the wet season when they take the Osborne out of the bag, it soaks up the moisture at first and they get a lot of BIOS errors for the first fifteen or twenty minutes that the machine is running. Once the top of the computer warms up, it then functions properly. The Osborne literally dries itself out.

Insects may not be a problem for most users, but they are a problem for Lewis, who uses mothballs (!) to discourage them from getting into the computer slots and disk drives. When the rain starts the insects come in waves. A solution was to get a piece of mosquito netting and tape it to the top rim and let it hang down over the disk drives — that stops the flying bugs. The mothballs are the only deterrent against the crawling bugs, and the researchers have a hard time trying to keep bugs out of the keyboard.

They use a portable fan to keep the Osborne cool at the field station. For the new computer center Lewis and Kaweche are developing at park headquarters, they are seeking an air conditioner.

Lewis uses the Lemon Spike Protector when the computer is hooked up to the generator, just for insurance, because if they ever had a problem, there'd be no way to fix the computer in Zambia. They've noticed that the screen flickers if the computer is close to the transformer, but the flicker disappears as you move the computer away from the transformer.

"Having dragged the Osborne from one side of the globe to the other, I found it to be a lot more durable than I thought it would be," said Lewis. "I see what a bonanza this technology is for graduate students or anyone doing research in the field, because getting on a mainframe at a university is very time consuming."

With a program like KERMIT (in the public domain and available from most Osborne user groups), researchers can communicate and transfer data from their Osbornes or other CP/M computers to almost any computer center in any university or institution, because most of them have mainframes and minicomputers that can use the KERMIT communications protocol.

Why did Lewis settle on Osborne computers? "I bought my first Osborne in America and took it with me to Africa. At the time portability was my major reason, and I needed a full-fledged computer."

Since that time Osborne donated an Executive (April of 1983), but Lewis has not approached other computer companies, and he does not want to jump on the IBM bandwagon. "There's no reason to!" he exclaims. "The fancy color graphics doesn't really interest a person like me, and I'm impressed enough by the graphics you can do with the Osborne (Osboard, Osgraph, Rembrandt and others). With hard data crunching and analysis, and word processing, the Osborne is a winner, and it's reliable. My original Osborne has been working perfectly without any servicing."

How are the local Zambians relating to the use of a computer in their village? "We tried to live at their level, living in their kind of dwelling, cooking over an open fire, and so on. We now have several Zambians trained. One, James Kachepa — what a star he is! — he works very hard doing papers, annual reports, animal quotas and whatnot, using the Osborne."

The Osborne Kachepa uses sits in the national park headquarters. The idea is to show the Zambian park officials how to use the technology and have a close link with the data gathering and analysis operation at the field station.

Lewis has many friends in Africa and in Zambia in particular, since he has spent many years working them them. He takes the non-conventional approach of working with Africans but not *for* them — he doesn't do the job for them, like so many western advisors do. He tries to develop opportunities for the local people to manage their own affairs, and is working on giving them facilities they didn't have before.

The villagers think the computer is very powerful. One local man who lost his wife to malaria asked Lewis if the Osborne could find him a wife.

The staff, comprised of local villagers, help Lewis track the wildlife and enter the data into the Osborne. Lewis shows them the plottings and the data summaries from time to time, and they are very impressed. The villagers think the computer is very powerful. One local man who lost his wife to malaria asked Lewis if the Osborne could find him a wife.

The chief of the village is involved in planning sessions with the Lupande research team, and has learned to accommodate the machine but not at the expense of his nobility. One day Lewis and his wife had to drive the land rover to park headquarters, over 600 miles away. The chief wanted a ride, but they had the Osborne strapped into the front seat to keep it from bouncing too much on the rough roads. They would be passing through many villages, and it wouldn't be right for the chief to be seen sitting in the back of a land rover, not in the front seat.

The chief at first asked, which is more important, the Osborne or the chief? Lewis unfortunately had to explain the importance of the computer to his people and to the economic future of his village. The chief laughed it off, but they still had to find him another ride.

Are they having any success in reversing the trend of elephant extinction and wildlife management?

"We did an elephant survey during the wet season (January) and the results were much more negative than we thought they would be. We've lost about seventy percent of our elephants in twelve years."

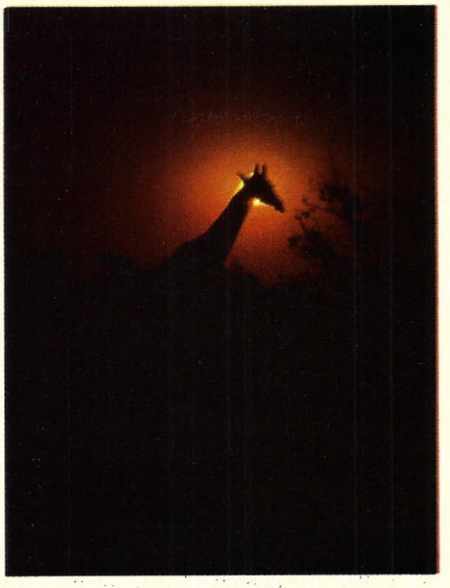
Lewis used the Osborne to compile the census data and prepared the preliminary report at his field station. He mailed the disk to park headquarters in Chilanga, where they used another Osborne to print the report — as many copies as they needed.

The Ministry took the report very seriously, and they realized they should be doing more to conserve their wildlife resource. Lewis is now working on a report for the president of Zambia, which he will prepare using WordStar (MicroPro, Intl.), Osboard, Osgraph and Rembrandt (Spectre Technologies).

Lewis and Kaweche are also putting together a "computer center" in Chilanga to train local Zambians in using the computer as a wildlife management tool. A volunteer computer science graduate is working to get the computer center functioning. The goal of the project is to train the people in resource monitoring and computer skills.

In a big party before leaving on a fundraising trip to the states, Lewis asked his Zambian staff if they were getting anything out of their experience. They replied that they feel very proud of their work and that they feel they are making history with resource and wildlife management. Lewis hopes that these people and their villages will be models for more conservation and wildlife management projects, and that these projects will become regionalized to embrace wildlife problems not just in the small areas but in the entire valley.

"We are trying to show how wildlife management can benefit the local people," explains Lewis. "For example, the river is overpopulated at this time with hippos. We studied the problem and concluded that a quota of hippos could be harvested each year. The skin is tough and can be used in place of leather for commercial goods, and the hippo meat is very good. So we could convince the local villagers not to burn the floodplains because this would lower the hippo population, and therefore lower the quota of hippos they could harvest; also, the elephants would not be driven away from the floodplains and their movements could be managed."



A giraffe caught in an African sunset.

Dr. Lewis is a pragmatist: "You can't preach conservation, but if you can add an economic incentive then you can win local support for conservation."

This approach may be the only one that might work in Africa today. The plight of starving children in Africa has finally reached the eyes and ears of westerners after several years of famine and drought. But too often aid money is spent without enough thought toward conserving the resources already available. Too little effort is made to convince the local inhabitants that poaching for profit doesn't pay in the long run; that manageable harvests would secure a future for their villages.

Dr. Lewis and his staff are turning Osbornes into resource management tools to stem the tide of waste and destruction. Whoever said personal computers are used only to separate people from nature has not yet seen how computers can help us manage the earth and *all* its inhabitants.

o

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An Osborne in the Bush

Dale Lewis

In his first dwelling, a mud-pole house on the banks of the Luangwa

An Osborne in the wild may conjure up visions of Adam leading a safari of investors into the jungle looking for the elusive hypergrowth model. The untold story is the philanthropic side of Adam's old company and of Ron Brown's new Osborne Computer Corporation. The old OCC donated equipment to many bio-research and conservation projects. The new OCC is continuing this support of conservation and bio-research projects by donating Vixens.

Osborne has always been interested in the benefits personal computers could bring to our world. The company has donated equipment to several African conservation projects and to biomedical research projects in the Pacific, among many others. Osbornes have been packed into the bush country of Africa, carried up the slopes of Mt. Everest, and flown to remote islands of the Pacific, through the efforts of courageous and innovative explorers and researchers.

The five-inch floppy disks become a matter of life and death for sick people on remote islands in the Pacific. Rather than transporting patients thousands of miles, a quick diagnosis in a small lab at the island is now possible, thanks to Osborne computers.

The five-inch screen of the Osborne 1 becomes a window into civilization for the people of the Luangwa Valley in Zambia, Africa. In this project the computer clearly makes the difference in whether these people, their valley, and their wildlife can be saved. Data is handled efficiently and recommendations on how to manage basic natural resources can be produced quickly. Starvation on a mass scale can be prevented if these countries can adopt policies of resource management.

Ron Brown, president of OCC, thinks it is appropriate for the company that introduced the first commercial portable computer to donate a Vixen to the conservation project on the banks of the Luangwa. Although Osborne Computer has no need at this time for tax write-offs (the loss carryover in the wake of the bankruptcy should preserve them from taxes for some time), the donation helps establish Osborne once again as a progressive organization. The Vixen computer is clearly intended for such use in the field — its target market includes grad students and researchers.

Dr. Dale Lewis, wildlife conservationist, found that corporations are not as willing to donate equipment as he thought, so he is very grateful for the donation from OCC. Lewis is a zoologist, not a politician or fundraiser, but he has had some success in getting equipment: Verbatim donated disks, Northwest Analytical donated its software package, Vivitar donated photographic equipment, and Epson and Star Micronics donated printers.

The donated equipment is essential for the research on the land use policies that could make wildlife a renewable resource for feeding and clothing the people. International aid organizations that at first wanted to start large scale agricultural projects are now changing their minds after seeing the data. Thousands and perhaps millions of lives could be affected by their decisions. We applaud the fledgling OCC for providing the computer to do the job.

It takes only sixteen hours to fly from New York to the Luangwa Valley. The wilderness areas of the earth are becoming more enclosed and put under glass for tourists, and many of these areas are not wild anymore. Our children may remember the computer age as an era of exploitation, ignorance and ambivalence, where machines replaced people and left them with nothing to do; or they may remember it as the age in which conservation became the watchword and computers were used in the management of our natural resources. Let's hope they get to know the elephant, and come to understand how wildlife and human life can support each other.

tb & cr

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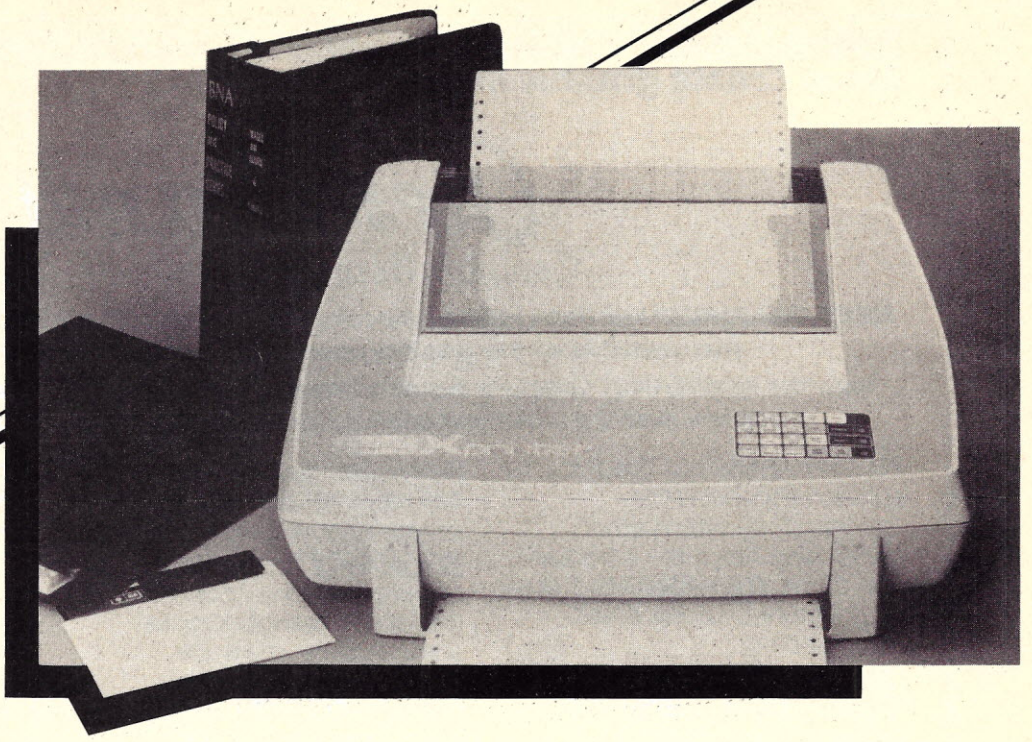

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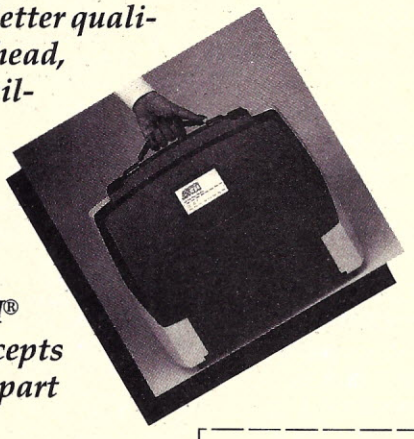

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- Texas Instruments TI-855
- IDS Prism 80 or 132
- IDS Microprism
- Gemini 10X and 15X
- C.Itoh 8510 Prowriter
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- NEC PC-8023A-C
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- Apple Dot Matrix Printer

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MEDIA MASTER
Questions and Answers

Q. What hardware configuration does MEDIA MASTER require?

A. MEDIA MASTER runs on a double-density Osborne-1 (either Osborne or Nuevo upgrade) or Executive computer. Other versions are available for the IBM-PC and compatibles, the Kaypro 2 and II (soon for the 4 and 10), the DEC Rainbow, and soon for the Zenith Z-100.

Q. Can I transfer programs from "foreign" computer formats and run them on my Osborne?

A. The answer is yes and no. In general, most "generic" 8-bit CP/M software will run just fine on your Osborne. There are tens of thousands of public domain programs and hundreds of excellent commercial programs in this category. Software that makes use of machine specific hardware (such as most graphics packages) or software that does not include an "install" program for different cursor control commands will probably require modification before use on your Osborne.

Unfortunately, you cannot run 16-bit, IBM software on Osborne 8-bit computers. Nothing short of new hardware can make this possible, but most data files transferred to or from "foreign" formats (even the 16 bit formats) are completely compatible. This means that Wordstar files, Lotus 1-2-3 files, dBase II data and command files, SuperCalc files and many other types of data files may be freely exchanged with other computers. For example, the same Wordstar file could be started on an IBM-PC running PC-DOS and finished on the Osborne using Wordstar under CP/M!

Q. Why are Apple, Commodore and Atari formats not included?

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User Groups

MYCALC: an Inexpensive Alternative to Upgrading to SuperCalc2™

Alan R. Bechtold

Paul Winternitz

I think this software is big news for Osborne computer owners. Until MYCALC's release in March of 1984, most owners of anything other than an Osborne computer had to spend in excess of $200 to purchase a full-powered truly versatile electronic spreadsheet program. Now Software Toolworks has changed that — their new program MYCALC will handle any spreadsheet task that SuperCalc™ can handle (and almost all the tasks handled by SuperCalc2™). It is probably the least expensive offering in the class of spreadsheet programs to date.

In my opinion MYCALC is better than the original SuperCalc that came with your Osborne. At $59.95 you should consider it even if you don't use a spreadsheet for more than extended checkbook balancing and family budgeting. You most definitely should try MYCALC before you buy an update to replace your older SuperCalc. MYCALC is good enough to recommend over the $125 upgrade to SuperCalc2.

Some of MYCALC's more outstanding features, other than those found on most expensive full-featured spreadsheets, include:

- Selectable decimal place and title locking.
- Four special numeric display modes including financial and horizontal bar graph.
- A HELP facility that is many levels and pages longer than SuperCalc's "Answer Key."

MYCALC spreadsheets, when saved as disk files, are also accessible and modifiable using WordStar or any standard word processor. They can also be modified or inspected by an individualized BASIC program (or program in any other language) of your own construction.

Other features of MYCALC allow formulas to refer to entries in any location on the worksheet without affecting the validity of the computed values. Columns can also be set to a width of *zero*, allowing them to be effectively eliminated and/or suppressed in print operations, accomplishing many of the same things that other worksheet programs do with different mechanisms, such as *windows*. Formulas can also refer to entries in other worksheets stored on disk, and a TRANSFER command allows you to jump quickly around from sheet to

MYCALC™: A full featured, electronic spreadsheet at an affordable price. For the Osborne 1, IBM PC and virtually all CP/M computers. **$59.95** from Software Toolworks, 15233 Ventura Blvd., Suite 1118, Sherman Oaks, CA 91403.

Paul Winternitz

sheet. Lines can be sorted and an external referencing feature allows you to separate related data into individual worksheets while still sharing information whenever required.

I was disappointed to find that MYCALC doesn't come set up for use with the Osborne 1's function keys, as it is with so many of the other computers on which it runs. In fact, Software Toolworks, a company that used to be very big on the Osborne line, has even neglected to list our favorite brand in their chart of available configurations. Instead, we have been relegated to the column marked *Std. CP/M Computers.* Sigh.

Also, the various commands are not as similar to SuperCalc's as I would have liked, but they are close enough to not cause you a lot of trouble in making the transition. Overall, I do like the speed and power of the program, and the price simply cannot be beat.

When compared to the competition, MYCALC has all the features of SuperCalc or VisiCalc. It allows you to adjust column widths to your needs, enter virtually any type of mathematical operation into your formulas, and all the other standard features you've come to expect. The only limitation is your computer's memory. For example, on a 64k Osborne computer, you will only be able to use a maximum of 1,000 of MYCALC's available 13,000 cells — less if you use a lot of formulas in your worksheet.

MYCALC is quite fast by today's standards, bringing up screen after screen, and adjusting its display as you move around on the spreadsheet with little or no waiting on your part. It keeps pace very well. On top of all this, the program also comes complete with a number of pre-designed templates, or ready-made spreadsheets, with formulas and headings already entered for you. Included are templates for real estate analysis, tax form preparation, and loan payment amortization, as well as one for use with the excellent tutorial section of the user's manual.

You'll find this program easy to learn, too. The manual is clearly written, explaining what you can do and how to do it, then running you through a complete tutorial with sample information and very understandable instructions, all making the software's operation easy to understand and fully utilize in just a few short sessions. To put it quite bluntly, it puts the SuperCalc manual in your Osborne guide to shame.

In short, MYCALC is indeed, as the publisher says, "A soft buy in a hard world." The program is worth many times its purchase price. If you use SuperCalc quite a bit, but have not yet purchased an upgrade to SuperCalc2, I would strongly suggest that you consider purchasing MYCALC instead. If you already have SuperCalc2, I must admit there would be little reason to own MYCALC. Now, if Software Toolworks would just go back to mentioning our favorite computer in their manuals...

This article first appeared, in a substantially different format, in the Summer, 1984 issue of POLICENET *Magazine.*

Shades of WordStar, Some WordStar Interfile Techniques

Dick Ezzard

One breakthrough for a writer working on a word processor comes when he unshackles himself from the habit of always working on the tail end of a writing project — a habit grooved and re-grooved because with a typewriter (or quill pen), the tail end is always the most convenient place to work. That's where the blank paper is.

What does phonetic writing represent? The networks of my thoughts are multi-colored, many-dimensional, infinitely interconnected and instantly associated and reassociated according to my own idiosyncratic learning experiences. Compared to the intricate, immense, technicolor, 3D, living web of human thought, text extruded by a typewriter or even a word processor is a poor, skinny little worm — an essentially linear artifact. Like typewriter text, a WordStar file is a string of characters with various knots such as word spacings, line endings and paragraph endings tied into the string.

But just as a reference book permits multiple easy access to any point for reading, so does the word processor instrument facilitate access to text at any point — at infinite points — for writing. The text string can be cut into and rearranged and new knots can be tied effortlessly. Rearrangement and interjection operations in the paper-and-ink world are cumbersomely involved with note slips and note cards and physical cutting and pasting, but they come easy with a word processor. (Deletion is almost too easy!)

The freed-up writer learns the use of place-markers to jump around and work throughout an entire WordStar file — instead of merely adding on to a string's tail end. The writing process becomes much more like blocking out and filling in. You get to write in the middle and at the beginning as well as at the tail end.

The second breakthrough comes when the writer enlarges his canvas by one more dimension: Instead of working throughout a single file, he works all over the system! Even though WordStar will suck you into one-file operations, there is no need to so stultify yourself. You can easily work in two or more files simultaneously. You can append notes to the end of another file. You can quickly glance at an outline. You can work all over the disk, indeed, you can work all over the system. And it doesn't take a new high-cost program to do these things, just the application of your own human technique to available WordStar interfile power.

Avoid file focus! Try to make it a habit to work in two or more files simultaneously.

This technique is especially valuable when you are working on some writing of a certain heft, something more than just a simple letter, some kind of ... Project. One problem with computers is the tiny periscope view which forces us to focus on the current segment of text rather than the context. A sweeping panoramic overview is difficult. Since layout of an entire complex project may be difficult to hold in the mind's eye, it is often useful, sometimes essential, to have a jotted outline to refer to when you are working on a mural-sized piece, so you can momentarily step back for a full project overview.

Let's say you are writing along, you finish a segment, and need to glance at the outline of your project to see where to go next. You hit a special function key and your outline comes into view. After browsing, finding out what you wanted to know, you hit a couple of keys and the outline goes away again.

Okay, many of the newer, more elaborate word processing programs boast a "windows" feature. Windowing allows you to look at two (or more) files simultaneously, work in either or both, yet maintain separate identities for filing on the disk. Typical uses for a window feature are to glance at an outline file when working on a text (just what we're talking about here), or to jot down something which is not germane to your main effort of the moment by jotting in a separate "Odd Notes" file.

While WordStar does not have a specific windowing capability, ingenuity lets you achieve the same logical effects with an "almost windows" facility I'll call "Window Shades." Shades technique has a metaphorical effect of (while working in a main file) pulling down a shade with a message written on it (such as your outline). You can look at the outline, then snap the shade back up out of the way and go back to working in your regular window.

Shades starts with WordStar's regular ^Kr command which will bring any other file into the file you are working in. The simple ^Kr file read command, however, once executed does not differentiate between the stuff that belongs to the file you are working in and the material you have brought over from the other file. It may be bothersome to have extraneous bits and pieces of the outline "welded" into your text where it is hard to strip out again.

The technique part involves thinking ahead, to be prepared for what you will want to do later, which is to erase! The solution is to bring the extraneous matter in as a marked block. Then you can easily see on the screen what is the outline you are referring to and what is your text file. And as soon as you have glanced at the outline, you can erase it with a ^Ky and go back to what you were doing. So you want to pull your shade down as a segregated marked block.

To do that, you pre-mark a tiny block into which you read the reference file. Use ^Kb ⮐ ^Kk^Qb (puts cursor into the currently marked block) and then do ^Kr to bring in your reference material. It comes in already marked as a block. When you are done looking at it, ^Ky snaps the shade back up by erasing it in the file in which you are currently working. (It still exists for repeated reference in its own file and you can glance at it again anytime by just repeating the operation.)

Because the operation is a little complicated, if you are going to do shades a lot, you will want to automate the whole thing by setting up a pre-programmed special function key to cascade the WordStar commands involved. Many systems allow for programming function

keys. Another alternative is to use a special program such as SmartKey I or II, ManyKey, ProKey, QuikKey, etc., to work in conjunction with Word Star.

The keystrokes you want to put into a special function key are as follows:
^Kb ↵ ^Kk^Qb^Kr0 ↵

You can easily work in two or more files simultaneously. You can append notes to the end of another file. You can quickly glance at an outline. You can work all over the disk, indeed, you can work all over the system.

where ↵ stands for the RETURN key or ENTER key.

To use this special function key properly you have to preset your reference outline file in a file called "O" which is the file always read in by this particular sequence. Properly installed, when you hit this special function key, bang, in comes your outline as a marked block, just like pulling down a shade in front of your main file. As mentioned previously, ^Ky gets rid of it again. And you are right where you were before pulling down the shade.

Before you install a special function key, you may want to give yourself a walk-through demonstration, slow test the operation "by the numbers." Put something in a file called O and then see how easy it is to bring it in, glance at it, and erase it.

The technique involved, your own mental Ju-jitsu, is first to always keep the outline of you current project in a file called "O". (Different outlines from different files on different disks can be easily swapped into your O file at the start of a writing session.) And secondly, because you will just want to glance at it momentarily, you bring the shade down prepared for easy erasure by premarking the block. Human foresight and WordStar tools together yield the desired effect.

You can also, of course, rig a similar key to expedite writing notes out to another file. Let's say that your application requires that you keep a separate set of footnotes or endnotes to each chapter. As you are writing along, you write a note or a citation which has to be sent to the endnote file. You mark the note as a block and hit a special function key which brings in the note file, integrates the new note at the bottom of the notefile, writes the whole thing back out and erases the note in your current text file.

In this case, you write something to be included in the "shade" which gets pulled down and snapped up automatically. The technique:

1. Write your note wherever you happen to be in the current text file.

2. Do ^Kb to mark the beginning of the note, then immediately press ↵ to push the note down one line. Go to the end of your note, press ↵ and mark ^Kk (block end). Your note is now configured as a block with a blank line at the top, and a line ending included at the bottom.

3. ^Qb puts the cursor at the top of the note on that blank line.

4. Read in your note file, ^Kr (it comes "into" the block) and immediately write it back out again. That's Kw back to the same filename, and Y for yes to overwrite that file.

5. ^Ky to erase the block in your text file, away goes the note.

Steps 3, 4, and 5 can be automated with the following programmed special function key: ^Qb^KrN ↵ KwN ↵ Y^Ky which will always bring in a file called N and overwrite out to the file called N. All you have to remember is to keep your current notes file in a file called "N".

This same technique works even if you are not intentionally keeping a separate footnote/endnote file. Say you are working on a current project and a thought occurs about something off point that you'll want to keep for future reference. Jot it down in a block and hit your notes key. Bang, it's gone from your current text, saved in your notes file.

If you absolutely need to look at two (or more) files simultaneously, rig a special function key to print a marked block, pull down the shade (like your outline), press this new special function key, then rip the outline out of your printer and tape it up next to the screen. ^Ky gets the shade out of your way on the screen. A special function key which cascades the commands to accomplish instant printing of a marked block is: ^KwP ↵ Y^KpPESCape key. You can see that this command set writes any marked block (possibly your outline pulled down as described) out to a special file called P for printing, and immediately prints it. The Y is there to answer "Yes" to the overwrite query WordStar will give you if a previous "P" file exists on your disk. (And if one does not exist, the single character Y will be entered in your file, a relatively harmless effect.)

One final comment: Although these commands work just fine with WordStar on a regular system, there is some slight delay for disk accesses as WordStar writes back and forth to files, and perhaps has to load up part of the overlay file to get going. Cascaded commands on programmed special function keys really come into their own when you operate WordStar on a RAM disk — either a portion of memory configured as a disk or an add-on piece of hardware like the Drive C: sold for the Osborne computers. With that kind of setup you get snappy shades indeed.

In conclusion, although WordStar has no separate windows, ingenuity will allow most people to get along with pull down "shades" to glance at other files. Perhaps the most important thing to be learned from this is that when working with WordStar you should *avoid file focus*. Don't get stuck in the habit of working on the tail end of only one file at a time. There are many techniques that allow you to work in several files simultaneously, and if you break typewriter tunnel vision habits, you can work all over your system, writing to several files on any disk in any one session.

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WordStar's Seemingly Intermittent Print Controls

Bob Thomson

Have you ever been puzzled by an apparent failure of WordStar to return to normal 10 pitch type size after invoking, say, compressed type on your dot matrix printer? Even though you have checked and double checked and double checked and know the commands are correct, it still won't do your bidding? Your old hands know what the problem is, but some of our newer members may not, so here is some discussion of the subject.

My C. Itoh, ProWriter 2, dot matrix printer has the capability of printing in four different type fonts: normal 10 pitch, elite 12 pitch, proportional 12-15 pitch and compressed 16.5 pitch. I have set up my WordStar disks to use print control characters and to invoke these different type styles in mid-text when I want them.

My WordStar wakes up with 10 pitch as the "Normal" type face. I use the Alternate pitch control, ^PA, to invoke the 12 pitch elite type style, and the Normal pitch control, ^PN, to get back to 10 pitch Pica. Since the ProWriter keyboard command to change to the compressed type font is ESCape-Q, I use the mnemonic print control ^PQ, USR1, to invoke it from WordStar. I use other print controls also, but that's enough to illustrate what I want to discuss here.

When I want to have my printed matter in 10 pitch, I simply proceed from start up and everything is OK. To use 12 pitch for emphasis, or whatever, I use ^PA and proceed, going back to 10 pitch with a ^PN when finished with the 12 pitch section. Great! Everything is working as planned.

Now I want to insert a section in compressed type, so I invoke USR1 with a ^PQ command. Obediently, WordStar prints out everything typed in 16.5 pitch. All I have to do, to terminate the compressed type font, is enter ^PN to return to 10 pitch, right? Wrong!

WordStar recognizes ^PA as the command to begin using the specified alternative type and ^PN as the command to return to Normal pica. The user commands (USR1, USR2, ... RIBBON, RIBOFF, etc.) are not recognized by WordStar as alternatives to Normal pitch. Consequently, if you are in the normal pitch mode, then both WordStar and your printer are set for 10 pitch. When you instruct your printer to change to anything other than the Alternate pitch, WordStar is still operating at 10 pitch, since it thinks it never left 10 pitch.

To return to 10 pitch from any type size other than the Alternate, you must invoke ^PA then ^PN. This causes WordStar to go to the Alternate type first, then back to Normal.

This article first appeared in the September '84, *Toggle*, the Tacoma Osborne Group newsletter, Tacoma, WA.

Make It Harder In WordStar to Delete a Line By Mistake

Ronald Herman

This will be useful if you have ever accidentally deleted an entire line while editing with WordStar. The problem can arise in two ways: You hit ^Y instead of ^T because the two keys are next to each other on the keyboard. (The ^ symbol stands for the Control key.) Or, you enter ^Y instead of Shift and Y. The cure is relatively simple.

You can modify your working copy of WordStar so that the command to erase an entire line becomes ^Y^Y. That way it will take two keystrokes to delete a line instead of one. Now if you accidentally press ^Y nothing will happen. WordStar will display ^Y in the upper left hand corner of the screen and wait for you to enter the command a second time before obeying it. If you didn't intend to delete the line, simply press the space bar to cancel the command.

Run the INSTALL program from drive A with an unprotected *copy* of the WordStar disk in drive B. Answer the first question, Do you want a normal first-time INSTALLation of WordStar? with N. A list of four options will be displayed. Select option D, Modification of the INSTALLation.... Enter the name of your WordStar file (usually WS.COM, A:WS.COM or B:WS.COM) and then press Return (↵). Answer each of the questions about terminals and printers with a Return (↵) so that no changes will be made.

After this point, the required responses depend on which version of WordStar you have. If you have WordStar version 2.26, answer the last question, Are the modifications to WordStar now complete?...OK (Y/N), with N. You must answer this question with a plus sign (+) if you have version 3.30 in order to gain access to the patcher. INSTALL will respond with some details about patching and the prompt, Location to be changed:. If you have version 2.26, enter the address 052E at this prompt. If you have version 3.30, enter the address 0535 instead. INSTALL should display the Old Value: at that location (00).

For either version of WordStar, now enter the New Value:, 19 (hexadecimal code for ^Y), and press Return (↵) once more. Enter 0 (zero) at the next Location to be changed: prompt to terminate patching. Answer the last question, Any more changes?, with N. INSTALL will modify your WordStar copy in drive B, if you said WS.COM was B:WS.COM when you first started the modification above, or if you said A:WS.COM above, INSTALL will modify the WordStar program on drive A.

That's all there is to it. From now on the command to delete a line will be ^Y^Y, and you should never accidentally delete an entire line again.

o

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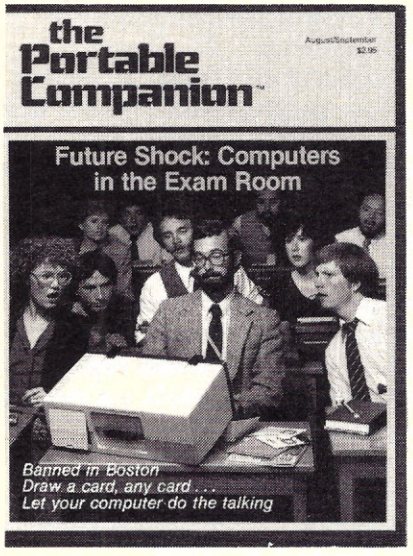

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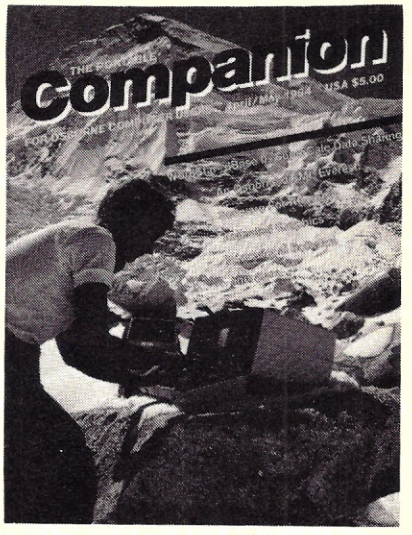


Letters

Function Keys For Graphics Programs

If you use the Bible system of typing, as I do ("Seek and ye shall find"), then a program like "Word Funny" by Dennis Stovall (*The Portable Companion* #16, March/April 1983) is a real pain to copy. Especially those places where there are so many columns of numbers generating screen graphics.

When I bought Drive C:, with it came a program called Manykey, used for setting up function keys. Using Manykey, I set up my BAS.COM file with the following function keys (□ indicates one space):

```
1: POKE□
2: FOR□A=
3: !□TO□
4: !□STEP□+1
5: NEXT□A↵
6: POKE□A,
7: GOSUB□
9: CHR$(26)
0: !,
```

^Y in Manykey creates a printout of the function keys, which you need in the beginning unless you have a lot better memory than I do.

With these function keys, I could type the most tedious parts of this program entirely from the numeric keypad on my Osborne 1, without taking my eyes off the printed page. Went faster, fewer errors, and after a while you get the keys memorized and develop a rhythm that makes it go faster.

I suppose this technique would work as well for writing the original program.

I also suppose SETUP from the CP/M disk would work to set up the function keys.

Speaking of Drive C:, I just can't live without it any more. I do a little programming in dBASE II, using WordStar to write the programs. I have both WordStar and dBASE II on one disk, load them into Drive C:, and move back and forth between them easily with no disk swapping. If anyone out there is debating whether to get Drive C:, just go ahead and get it. Short of a 10M hard disk, it's the best money you'll spend on your Osborne.

Ruth Putsche
Seattle, WA

"Print By Numbers" Works

I would like to answer the letter from K. C. Lim (*The Portable Companion* #15, Feb. 1985, Vol 4.1) about the MBASIC program "Print by Numbers", and assure him that indeed it works very well.

I have tested it in every way, using single and double density, with and without AUTOSTART, with MBASIC and the print program on the same disk as WordSTar and on separate disks, changing disks with ^C, and even pressing RESET before booting WordStar. As long as the printer is not turned off, it prints in the chosen mode.

This document has been merge-printed from a WordStar file using compressed print, double width print, and italics, all at once. Doesn't look like an Epson, does it?

I cannot understand what K. C. Lim's problem may be.

Pat Watters
Oakland, CA

CompuServe and COMM-PAC

Osborne owners, did you know... every Wednesday at 9:30 p.m. EST on CompuServe, there is an Osborne users group meeting? Well there is, and it is a great opportunity to "talk" to users from all over the States... It is a very rewarding experience. How do you get there? Well, at the CompuServe ! prompt, type GO PCS-47↵. This puts you in the CP/M SIG (Special Interest Group). There are meetings for Morrow, Kaypro and others at different dates and times.

Owners of the COMM-PAC modem package should be pleased to know that support service is still available. A short time ago a phone call to the original equipment manufacturer (CTS-Knight) describing my problem resulted in directions to send them my inoperative modem and cable along with a $25.00 check. CTS stated that it they could repair it they would and then cash my check. Well, lo and behold, not only did they cash my check, they sent me a brand new modem and cable. Now that's support! Their address is: CTS Corporation, Knights Division, P.O. Box 320, Sandwich IL, 60548.

Joseph M. Janules
Sterling Heights, MI

More On CompuServe

I am always surprised at how many people fail to avail themselves of the Osborne Conference, on CompuServe. This conference convenes every Wednesday night at 9:30 EST and most people stay aboard for at least 30 minutes, sometimes an hour or more if the discussion is good.

CompuServe is not expensive, about $20 for a starter package and then $6.50 for an evening or Sunday hour. I have my charges billed to my VISA card. In addition to the Osborne group,

Letters *continued on p. 56*

Beginner's Tips

Logos From WordStar

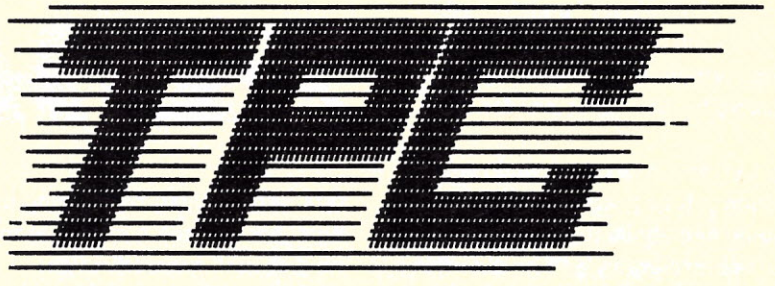
Create your own letterheads and logos with simple WordStar graphics.

Ron Whittaker

If you admire those chic notes from members of the "in set" with their neatly monogrammed initials in the right- hand corner, or wish you could have a fresh letterhead for your business correspondence (without going through the bother and expense of having one designed and printed), these WordStar techniques may be for you.

Almost any logo design can be created with a dot matrix printer, of course. But most dot matrix letters scream *computer printout!* — not exactly the impression you want to convey for personal correspondence or important business letters.

By enlisting the help of a letter quality printer, the *search and replace* and dot command functions of WordStar, and your own imagination, you can quickly create a wide variety of letterheads. You can even have different versions for different occasions: formal, ultra-modern, abstract, etc. And, if your printer is equipped with two ribbon colors, you can go beyond what you see here and create striking letterheads in color.



Once stored on your WordStar disk, a letterhead can quickly be called up for use as you start to type each letter. This approach will allow you to create a string of letters on fan-fold paper without the bother of loading specially-printed sheets.

Here's how it works.

Although most of us never use the `.lh` (line height) and `.cw` (character width) commands in WordStar, they are available for controlling the actual height of the printed line and the width of the printed character. These are *dot commands*. Each command must be typed on a line by itself, with the "dot" (actually a period) in the first column position of the line. For example, a line height of 6 lines per inch, which makes it possible to have 66 lines on an $8^1/_2$ by 11 page, would be set by the following command:

```
.lh6↵
```

(The ↵ stands for the Return key.) The character width command works the same way; to set a character width of 12, for example, you type this command as a line by itself in WordStar:

```
.cw12↵
```

Most of us use a line height of 6 and character width of 10 or 12, but all kinds of interesting things start to happen when you change these dot commands to values such as 1, 2, 3, and 4. The majority of the samples shown here were created with settings of `.lh3` and `.cw3`.

When you first start designing your

monogram letters on the screen, they will bear little resemblance to the final product. (Note figure 1, with .lh3 and .cw3 at the top.) Your creation will totally fill a 52-column screen and even two-thirds of an 80-column screen. When it's printed it will dramatically change as it shrinks down to about one-quarter the screen size.

In addition to the variety of simple block letters shown, you will note that some of the samples have a basic solid rectangular format. The areas outside the letters have been filled in with some alternate character.

```
.lh3
.cw3
:----------------------------------
:----------------------------------
:---:::::::::::::::::::::::::--::::::::::
:---:::::::::::::::::::::::::--::::::::::
:---::::::::----------::::::--::::::::::--
:---::::::::----------::::::--::::::::::--
:---::::::::
```

Figure 1. *A WordStar file for creating logos. The "dot" commands appear at the top.*

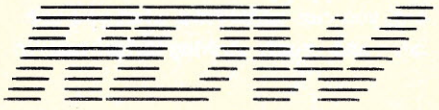
Once you finish your basic design, you can use WordStar's search and "ask-no-questions" global replace command to experiment with different characters. Type Control-QA (displayed as ^QA); when WordStar displays FIND? type the character you want to replace, followed by Return. When WordStar displays REPLACE WITH?, type the character you want to experiment with next, or even a blank space, followed by a Return. When WordStar displays OPTIONS?, type GN↵ (for "global" and "no asking"). This makes WordStar perform the substitution throughout the file without asking for your approval for each one.

By the way, this search and replace operation can be greatly speeded up by typing any key once the operation gets underway (preferably a ^S or something that won't affect the end of the text). This eliminates the screen updating, so you won't see what's happening, but after less than a minute or so you will see the not found...press escape key message come up indicating that the operation is finished.

The printouts are always a bit of a surprise, since it is hard to imagine what the pattern will look like after it has been reduced down to a fraction of the original size. If your printer has a colored ribbon option you can enter the appropriate code to change the color of the entire logo; or, more interestingly, you can just color the inside or outside part of the logo. (Use the ^OD command

to turn on and off the control code displays so you can more easily see the result.)

The samples which show *leaning* letters were created by entering different numbers of leading spaces at the beginning of each successive line.



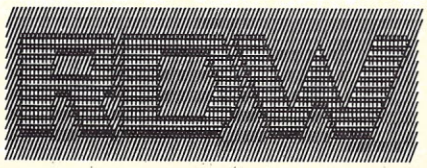
Dots make an interesting pattern character, but remember that WordStar will ignore any line that starts with a dot, unless it is a dot command. To solve that problem you would need to just insert some leading spaces at the left.

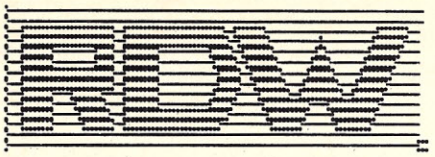
In actual fact, you will probably want to add 250 or more spaces at the left of each line to make the logo end up flush right. The very narrow character width of two or three means that a line can actually consist of 300 or more character spaces. With my 2.26 WordStar and the particular logo I chose, I set the right margin at 120 and spaced over beyond the right margin another 200 or so spaces.

Each time you go beyond the right margin WordStar displays a + in the margin and jumps to the next screen line. Since this adds even more confusion to a screen display which already looks illogical, you will want to do this after you have settled on the particular design you want to use.

Just remember that after you call up your letterhead and start writing, you must limit your reformatting to the text area under the logo. The whole logo will "explode" if you accidentally reformat it with your normal 80-column (or whatever) text margins. I have done that more than once and on these occasions I just had to clean out the debris and pull in a new logo from the file, or abandon the whole mess and copy the text to a new file.

Letterhead stationery looks more complete if there is something at the bottom of the page to balance whatever you have at the top. You might consider





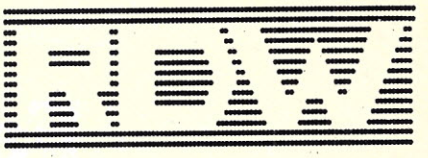
at least a simple double line at the bottom margin about 3/4 of an inch from the end of the page. You can create this by using repeating = characters and merging the space between the equal signs by designating a character width of 8. Since the latter can look a bit ragged, you might prefer the much cleaner result which comes from using a character width of 3.

In addition, you may want to add a line under this with your complete name, address and telephone number, if you can get all that on one line. Since I didn't want to be bothered with changing print wheels for this bottom *footing* type, but I wanted to set this line off from the type style used in the letter, I decided to use a ^PD command in front of this line to print it in darker letters. A ^PB (bold) might be even better.

I also use the .cw9, ^PA and ^PP commands in the footing line which invoke the proportional space mode (which I added to WordStar) to give the line a "set in type" look.

When I read the letterhead into a new file to start a letter, the footing line initially ends up just a few spaces below the logo. But since I type with the insert on (^V) mode, the footing line is pushed down with each Return I type.

In the case of a short letter this



means the bottom footing would end up too high on the page. This is solved by hitting enough Returns at the end of your text to bring the footing lines to within an inch or so from the bottom of the page. I have put a little reminder line right above the footing lines proceeded by two dots so it won't print. It says:

```
..This should end up on line 54.
```

This is an example of a WordStar *comment line* — a line that is not printed by WordStar but appears in your document. It utilizes the fact that WordStar ignores any line with a period ("dot") in the first column, unless it is a WordStar "dot" command; two periods constitute a "dot" comment.

Of course, you will have to experiment with the particular line height you use to see where your footing should start.

You will also want to include with your *logo template* all the printer and Merge-print parameters you want to use — placed before and after the logo and the footing, according to their function. After calling up your logo file, you can then immediately start typing the text of your letter. You will probably find it best to put in commands to *turn off* all the special functions after the last footing line. Otherwise you may get some surprises as your printer goes on to subsequent pages.

I was able to create over 20 variations of the "RDW" monogram in about an hour. Depending on your own creativity and artistic flare, you will probably be able to create even more interesting versions for yourself.

o

Fast Fund Raising With WordStar and dBASE II

Sort your volunteers to the top of your mailing list, and use MailMerge's conditional expressions to print form letters.

Lindsey McWilliams

It's curious that two of the most popular programs for microcomputers are among the most complicated. WordStar and dBASE II, widely criticized for their bountiful and complex command structures, still are the standards against which other word processing and database management programs are measured. And it's their very complexity which makes them powerful tools. A common application using both programs is processing mailing lists.

WordStar and MailMerge version 3.30 and later versions are particularly desirable for direct mail applications because they support conditional statements such as `.IF &STAT& >= ''4'' GOTO CONTRIB` and `.EX &STAT& = ''1'' GOTO PHVOL`. When using data from a dBASE II file, WordStar/MailMerge is very effective in directing text to particular people. The example here is adapted from the real world, condensed to conserve space and simplify the concepts presented. The basic problem is common to many non-profit organizations: a semi-annual fund raising drive, in this case revolving around a mailing to 3,000 people.

The logistical solution to the problem is simple. Staff people contact volunteers who help with the mailing and contact other volunteers; after the mailing to financial contributors, volunteers follow-up with phone calls and the money pours in.

The mechanical solution is more dif-


```
STRUCTURE FOR FILE:      A:FUNDRAZ.DBF
NUMBER OF RECORDS:       02986
DATE OF LAST UPDATE:     09/23/84
PRIMARY USE DATABASE
FLD       NAME        TYPE  WIDTH DEC
001       FIRSTNAME   C     023
002       LASTNAME    C     015
003       COMPANY     C     033
004       ADDRESS     C     030
005       CITY        C     020
006       STATE       C     002
007       ZIP         C     010
008       PHONE       C     013
009       STATUS      C     001
010       LSTCONTRIB  N     008  002
011       DATECNTRIB  C     008
012       SALUTE      C     030
** TOTAL **                 00194
```

Figure 1. *The structure of the example mailing list data file defined with dBASE II.*

The Status Field

Number	Designation
1	Office volunteer
2	Phone volunteer
3	Fund raiser volunteer
4	Individual contributor, $25
5	Family contributor, $50
6	Donor, $100
7	Major donor, $250
8	Sponsor, $500
9	Life member, $1,000

Figure 2. *The values of the STATUS field, which are important because volunteers must be contacted first.*

ficult. A data file must be created, the data must then be converted to a form recognizable by MailMerge, a WordStar master document must be prepared to use the data, and then the letters must be printed. Whew, those are some heady chores but then that's why we use computers — to make onerous tasks bearable.

Figure 1 shows the structure of the example data file. In a complete database management program, companion files would include additional information, perhaps summing total contributions or other information. Figure 2 shows the values of the STATUS field. These values are important because volunteers must be contacted first.

Assume the filename for the data base is FUNDRAZ. Using dBASE II, the file FUNDRAZ can be indexed on the status and the zipcode to an index file we call STATZIP:

```
INDEX ON STATUS + ZIP TO STATZIP ↵
```

The indexed file is accessed with the following command:

```
USE FUNDRAZ INDEX STATZIP ↵
```

Figure 3. *The MailMerge command file/form letter that uses conditional expressions to print form letters.*

```
..Master MailMerge command file
..**Omit page numbers
.op
..**Call up data file
.df FUNDMAIL
..**Define order of variables in data file
.rv FNAME,LNAME,CO,ADD,CITY,ST,ZIP,PH,STAT,LSTCONTRB,DATE,SALUTE
..**Set top margin to clear letterhead
.mt 10
..**Letters are mailed to volunteers first
.IF &STAT& ) "3" GOTO DATE
October 8, 1985
.EF DATE
..**Financial contributors' letters go out last
.IF &STAT& ( "4" GOTO ENDDATE
October 30, 1985
.EF ENDDATE

&FNAME& &LNAME&
..**If there is no company name, omit (/O) this line
&CO/O&
&ADD&
&CITY&, &ST&  &ZIP&

Dear &SALUTE&:

..**This section goes to all volunteers**
.IF &STAT& )= "4" GOTO CONTRIB
     As a KDOG supporter, ...

..**This section goes to office volunteers**
.EX &STAT& = "1" GOTO PHVOL
     Our direct mail program is well under way ...

.EF PHVOL
..**This section goes to phone volunteers**
.EX &STAT& = "2" GOTO VOLDOLLAR
     Our direct mail program is well under way ...

.EF VOLDOLLAR
..**This section goes to fund raising volunteers**
.EX &STAT& = "3" GOTO ENDVOL
     Your efforts to call on your friends ...

.EF ENDVOL
.EF CONTRIB
..**This section goes to all financial contributors**
.EX &STAT& )= "4" GOTO CLOSING
     Yes, KDOG's semi-annual fund raising drive ...

..**This section goes to smaller contributors
.IF &STAT& )= "7" .AND. &STAT& (= "9" GOTO BIGDOLLAR
     Your regular contribution is the mainstay ...

.EF BIGDOLLAR
.IF &STAT& )= "4" .AND. &STAT& (= "6" GOTO END
     As a major sponsor of KDOG, your contributions ...

.EF END
..**Everyone gets the closing information**
.EF CLOSING
     Enclosed is a brochure ...

Sincerely,


Glandhand Goodman
General Manager

Enclosure
..**This goes to financial contributors**
.EX &STAT& )= "4" GOTO END
P.S. Your stamp on the enclosed prepaid envelope saves KDOG 25 cents.
.EF END
.pa
```

This puts the volunteers at the top of the file and in zip code order, which is a plus when it comes to getting letters to the post office.

The file is then translated to a MailMerge readable file we call FUNDMAIL, using the following dBASE II command:

```
COPY TO FUNDMAIL DELIMITED WITH '' ↵
```

This creates a comma-delimited file (the MailMerge standard) with each field surrounded by double quotation marks (''). If this isn't done and a field has a comma in it, MailMerge will get terribly confused and you will get equally upset.

A quick bit of housekeeping on the new data file needs to be done. Empty fields were converted with a space between the quote marks that may throw off your letter's format if not changed. Entering the file in WordStar's N (non-document) edit mode, the empty fields are replaced by using WordStar's Control-QA (^QA) command. When WordStar displays FIND?, type a double-quote, followed by a space and another double-quote (" "), followed by a Return. When WordStar displays REPLACE WITH?, type two double-quotes with no space ("") followed by a Return (↵). When WordStar displays OPTIONS?, type GN↵ (where G means in the entire file and N means to replace without asking).

Next comes the master document with the MailMerge dot commands to use your data file. Figure 3 lists a skeletal master document; lines beginning with double periods are WordStar comment lines which are ignored in subsequent processing. Here the comment lines explain the purpose of the next line. The top of the listing sets the format of the letter (removes page numbers and sets top margin) and ties in the data file and the sequence of variables within it. Note that variable names need not match the field names in the original data file (figure 1); however, they must be consistent within the master document or MailMerge won't find them.

The first use of conditional statements occurs with the date. MailMerge conditionals have two forms: 1) IF this condition is true, go to the end command and do whatever's next, and 2) EXcept when this condition is true, go to the end command and do whatever's next. The exact syntax looks like this:

```
.IF &VAR& = ''Expression'' GOTO label
.EX &VAR& = ''Expression'' GOTO label
```

The conditional must be canceled with the end command .EF. When multiple conditionals are used, a label following GOTO keys in the proper .EF. Complex conditionals are possible with the .AND. and .OR. statements. The comparison characters in figure 4 indicate the selections possible.

Although it may not be readily apparent, it's possible to create the desired document in different ways. For example, the date selection could as easily been set with .EX &STAT& < ''4'' GOTO DATE as with .IF &STAT& > ''3'' GOTO DATE.

Conditional Comparison Characters

Character	Meaning
=	Equal
<>	Not Equal
<	Less Than
>	Greater Than
<= or	
=<	Less Than or Equal to
>= or	
=>	Greater Than or Equal to

Figure 4. *Comparison characters used with complex MailMerge conditional expressions.*

WordStar and MailMerge version 3.30 and later versions are particularly desirable for direct mail applications because they support conditional statements.

Of course, there are some conditions placed on using conditionals. Like all dot commands, conditionals must begin in column one. Conditionals depend on external data, supplied and defined by the .DF, .RV, and/or .AV commands. Conditionals can be nested in which case a label should follow the GOTO to key in the proper end command. Labels can have up to 20 characters but can never start with a number and cannot contain spaces. And MailMerge reads characters in ASCII sequence where numerals are first, followed by all the capital letters, and finally all lower case letters.

How has this helped us solve our original problem? First, our original data base is intact and ready for processing. Without conditionals, five separate letters and data bases must be created which is potentially confusing and takes up disk space. With conditionals, staff members can print the form letter/command file (figure 3) early in October, knowing that volunteers will be printed first. With those letters in the mail, financial contributors' letters are still being printed and volunteers come in to stuff them into envelopes. Those volunteers also contact other volunteers to help with phoning financial contributors whose letters arrive coincidentally with first of the month paychecks. And the money rolls in.

o

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NEC 8000 DD	TRS80 IV DD	LOBO MAX80 DD	KAYPRO II DD
NEC 8001A DD	OKI if 800 DD	XEROX 820 DD	DEC VT180 DD

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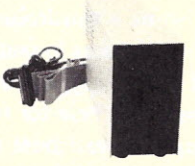

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!----!----!----!----!----!----!----!----!

Wardrobe Planner

A spreadsheet to use for planning your vacation or business trip and have a complete wardrobe list in case your luggage is lost.

Sanford Gerstel

My Wardrobe Planner is an uncomplicated spreadsheet programmed to help you plan a wardrobe for a vacation or other purpose. It helps you choose your wardrobe, counts the number of times a garment is planned to be worn, and calculates the weight of clothing taken. Wardrobe Planner can also be a wardrobe check list and a record of items in your luggage, to use if if your luggage is lost.

You can use this article for two purposes: to set up a spreadsheet to plan your wardrobe as described above, and to learn more about using SuperCalc2.

Although Wardrobe Planner is based on the SuperCalc2 program, its formats and arithmetic logic can be duplicated for many other sophisticated spreadsheet programs.

Setting Up The Spreadsheet

Start with a blank spreadsheet; immediately set your spreadsheet for manual calculation using the SuperCalc2 global command /G(lobal),M(anual) (you type the /G,M and SuperCalc2 displays the rest of the command words). Manual calculation avoids repeated (automatic) recalculation whenever you enter or change a number or formula in a cell.

Figure 1 reproduces the initial version of your Wardrobe Planner worksheet. You can follow step-by-step instructions to modify this spreadsheet.

Initial column widths are: column A, 20 characters; column B, 1 character; columns C through I, 4 characters each; column J, 2 characters; and columns K through N, 6 characters each. The total spreadsheet width of 75, when added to SuperCalc2's border width of 5, will fit on an 80 character screen. (75 character width will also print, with standard spacing, on $8^1/_2$" wide paper.)

Figure 2 displays the formulas used in columns K, L and N. Rather than filling in the 57 cells between rows 10 and 58 in columns K, L and N individually, proceed as follows:

1. Enter the formula SUM(B10:J10) in cell K10.
2. Replicate cell K10 to cells K11 through K58 with the SuperCalc2 command /R,K10↵ ,K11:K58↵.
3. Enter the formula IF(K10,1,0) in cell L10.
4. Replicate cell L10 to cells L11 through L58 with the SuperCalc2 command /R,L10↵ ,L11:L58↵.
5. Enter the formula L10*M10 in cell N10.
6. Replicate cell N10 to cells N11 through N58 with the SuperCalc2 command /R,N10↵ ,N11:N58↵.

```
  |       A       | | C|| D|| E|| F|| G|| H|| I|  | K || L || M || N |
 1|                              FIGURE 1
 2|                              --------
 3|WARDROBE SELECTOR WORKSHEET
 4|PERIOD: 8/20/84 TO 8/26/84
 5|                                                                  WT.
 6|                  | NO. OF TIMES WORN EACH DAY |  TOTAL    NO.   PER  TOTAL
 7|                  | -------------------------- | TIMES ITEMS ITEM   WT.
 8|ITEM DESCRIPTION  | MON  TU WED  TH FRI SAT SUN | WORN TAKEN (LB)  (LB)
 9|----------------- | --- --- --- --- --- --- --- | ----- ----- -----  -----
10|SUITS:            |                             |    0     0            0
11|BLUE              |   1                         |    1     1     3      3
12|GREY PIN          |             1               |    1     1     3      3
13|TUX               |         1                   |    1     1     3      3
14|                  |                             |    0     0            0
15|JACKETS:          |                             |    0     0            0
16|BLUE BLAZER       |       1         1           |    2     1   1.5    1.5
17|GREY HERRINGBONE  |         1                   |    1     1   1.6    1.6
18|BROWN TWEED       |                     1       |    1     1   1.5    1.5
19|                  |                             |    0     0            0
20|TIES:             |                             |    0     0            0
21|SOLID BROWN       |                     1       |    1     1    .1     .1
22|BLUE/RED STRIPE   |   1       1   1             |    3     1    .1     .1
23|BLUE/TAN STRIPE   |       1                     |    1     1    .1     .1
24|BLACK BOW         |         1                   |    1     1    .1     .1
25|                  |                             |    0     0            0
26|SHIRTS:           |                             |    0     0            0
27|WHITE TUX         |         1                   |    1     1    .5     .5
28|WHITE DRESS       |   1     1   1               |    3     1    .5     .5
29|BLUE BUTTONDOWN   |       1           1   1     |    3     1    .5     .5
30|DENIM             |       1                     |    1     1    .5     .5
31|WHITE PULLOVER    |             1               |    1     1    .5     .5
32|COLORED PULLOVER  |                             |    0     0    .5      0
33|SWEATSHIRT        |                     1       |    1     1    .5     .5
34|                  |                             |    0     0            0
35|BELTS:            |                             |    0     0            0
36|BLACK             |   1     2   1               |    4     1    .2     .2
37|BROWN             |       1           1   1     |    3     1    .2     .2
38|WHITE             |       1     1         1     |    3     1    .2     .2
39|                  |                             |    0     0            0
40|TROUSERS:         |                             |    0     0            0
41|GREY DRESS        |       1   1                 |    2     1     1      1
42|BROWN DRESS       |                     1       |    1     1     1      1
43|TAN DRESS         |                   1         |    1     1     1      1
44|WHITE CASUAL      |             1               |    1     1     1      1
45|JEANS             |       1                     |    1     1     1      1
46|BLUE CORD         |                     1       |    1     1     1      1
47|                  |                             |    0     0            0
48|SOCKS:            |                             |    0     0            0
49|BLACK             |   1   1   2   1   1   1     |    7     1    .1     .1
50|WHITE             |       1     1         1     |    3     1    .1     .1
51|                  |                             |    0     0            0
52|SHOES:            |                             |    0     0            0
53|BROWN DRESS       |       1                 1   |    2     1     2      2
54|BROWN CASUAL      |                             |    0     0   1.7      0
55|BLACK DRESS       |   1     2   1               |    4     1     2      2
56|TAN CASUAL        |                   1         |    1     1   1.7    1.7
57|WHITE CASUAL      |             1               |    1     1   1.7    1.7
58|SNEAKERS          |       1                 1   |    2     1   1.6    1.6
59|                  |                             |                      -----
60|                  |                             |          TOTAL WEIGHT 32.8
```

Figure 1. *The initial version of the Wardrobe Planner worksheet.*

All numbers use real number format (SuperCalc2's default format). Text cells C8 through N9 are right justified to avoid confusion with numbers in columns C through N. Positions of all other text is left to your preference.

Retain SuperCalc2's default for row calculation. (The difference between row and column calculation will be discussed later.)

Force a calculation by pressing the ! key (Shift and the number 1 key). Your screen display should duplicate figure 1.

Finally, reset your spreadsheet for automatic calculation using the SuperCalc2 command `/G,A(uto)`.

Save the entire spreadsheet on your disk as filename WARDRB1 using SuperCalc2's command `/S` followed by the name of the file, a Return, and `A` for all: `WARDRB1↵ ,A(ll)`.

You are now ready to manipulate your Wardrobe Planner spreadsheet.

Planning a Wardrobe

`L(oad)` filename `WARDRB1` if it is not already on your screen. Your screen display should duplicate figure 1.

Column A lists your clothing. Columns C through I provide space for you to select clothing changes as many times as you wish, each day for seven days, indicating by a single digit the number of times a particular garment has been planned to be worn that day.

Formulas in column K, `Total Times Worn`, count the number of times an item has been selected. A number greater than 0 in column K indicates at least one choice of the item, 0 denotes no selection of the item.

Column L is programmed to display the number 1 if the number in column K is at least 1, 0 otherwise. (Adjustments to column L will be discussed later.) An alternate formula for column K cells is: `IF(K10>0,1,0)`, and so on.

Column M shows the unit weight of each item and column N calculates the total weight of the number of items selected. The total weight of the wardrobe selected appears in cell N60.

Experiment with your Wardrobe Planner spreadsheet: change or enter

	K	L	M	N
1		FIGURE 2		
2		--------		
3	FORMULAS USED IN FIGURE 1, COLUMNS K, L, N			
4	----------			
5				
6				
7				
8				
9				
10	SUM(B10:J10)	IF(K10,1,0)		L10*M10
11	SUM(B11:J11)	IF(K11,1,0)		L11*M11
12	SUM(B12:J12)	IF(K12,1,0)		L12*M12
13	SUM(B13:J13)	IF(K13,1,0)		L13*M13
14	SUM(B14:J14)	IF(K14,1,0)		L14*M14
15	SUM(B15:J15)	IF(K15,1,0)		L15*M15
16	SUM(B16:J16)	IF(K16,1,0)		L16*M16
17	SUM(B17:J17)	IF(K17,1,0)		L17*M17
18	SUM(B18:J18)	IF(K18,1,0)		L18*M18
19	SUM(B19:J19)	IF(K19,1,0)		L19*M19
20	SUM(B20:J20)	IF(K20,1,0)		L20*M20
21	SUM(B21:J21)	IF(K21,1,0)		L21*M21
22	SUM(B22:J22)	IF(K22,1,0)		L22*M22
23	SUM(B23:J23)	IF(K23,1,0)		L23*M23
24	SUM(B24:J24)	IF(K24,1,0)		L24*M24
25	SUM(B25:J25)	IF(K25,1,0)		L25*M25
26	SUM(B26:J26)	IF(K26,1,0)		L26*M26
27	SUM(B27:J27)	IF(K27,1,0)		L27*M27
28	SUM(B28:J28)	IF(K28,1,0)		L28*M28
29	SUM(B29:J29)	IF(K29,1,0)		L29*M29
30	SUM(B30:J30)	IF(K30,1,0)		L30*M30
31	SUM(B31:J31)	IF(K31,1,0)		L31*M31
32	SUM(B32:J32)	IF(K32,1,0)		L32*M32
33	SUM(B33:J33)	IF(K33,1,0)		L33*M33
34	SUM(B34:J34)	IF(K34,1,0)		L34*M34
35	SUM(B35:J35)	IF(K35,1,0)		L35*M35
36	SUM(B36:J36)	IF(K36,1,0)		L36*M36
37	SUM(B37:J37)	IF(K37,1,0)		L37*M37
38	SUM(B38:J38)	IF(K38,1,0)		L38*M38
39	SUM(B39:J39)	IF(K39,1,0)		L39*M39
40	SUM(B40:J40)	IF(K40,1,0)		L40*M40
41	SUM(B41:J41)	IF(K41,1,0)		L41*M41
42	SUM(B42:J42)	IF(K42,1,0)		L42*M42
43	SUM(B43:J43)	IF(K43,1,0)		L43*M43
44	SUM(B44:J44)	IF(K44,1,0)		L44*M44
45	SUM(B45:J45)	IF(K45,1,0)		L45*M45
46	SUM(B46:J46)	IF(K46,1,0)		L46*M46
47	SUM(B47:J47)	IF(K47,1,0)		L47*M47
48	SUM(B48:J48)	IF(K48,1,0)		L48*M48
49	SUM(B49:J49)	IF(K49,1,0)		L49*M49
50	SUM(B50:J50)	IF(K50,1,0)		L50*M50
51	SUM(B51:J51)	IF(K51,1,0)		L51*M51
52	SUM(B52:J52)	IF(K52,1,0)		L52*M52
53	SUM(B53:J53)	IF(K53,1,0)		L53*M53
54	SUM(B54:J54)	IF(K54,1,0)		L54*M54
55	SUM(B55:J55)	IF(K55,1,0)		L55*M55
56	SUM(B56:J56)	IF(K56,1,0)		L56*M56
57	SUM(B57:J57)	IF(K57,1,0)		L57*M57
58	SUM(B58:J58)	IF(K58,1,0)		L58*M58
59				
60				SUM(N2:N59)

Figure 2. *The formulas used in columns K, L and N of the Wardrobe Planner.*

any number in columns C through I; change the weight of any garment in column M. You should immediately see the figures change in columns K and N.

After you've familiarized yourself with the Wardrobe Planner spreadsheet, clear your screen with the /Z,Y(es) command.

Improving Appearance of the Spreadsheet

L(oad) filename **WARDRB1** if it is not already on your screen. Your screen display should continue to duplicate figure 1.

Notice the inconsistencies of the numbers appearing in columns M and N: some have no decimal point, others show one figure after the decimal. Columns K, L, and N are cluttered with unnecessary zeros.

You can improve the appearance of your spreadsheet by removing unneeded numbers and lining up numbers with decimals so that the decimal digits line up to the right of the decimal point.

Figure 3 illustrates a neat, uncluttered display of numbers in columns K through N. Use the User-defined formats matrix of SuperCalc2 to automatically obtain the figure 3 display of columns K through N as follows:

1. Bring the User-defined formats matrix to your screen with the /F,D(efine) command. Set column 1 of the User-defined formats matrix for:

Floating $	N
Embedded Commas	N
Minus in ()	N
Zero as Blank	Y
%	N
Decimal Places	0
Scaling factor	0

2. Set column 2 of the User-defined formats matrix for:

Floating $	N
Embedded Commas	N
Minus in ()	N

Zero as Blank	Y
%	N
Decimal Places	1
Scaling factor	0

Bring the Wardrobe Planner spreadsheet back to your screen with the ^Z command.

3. Format column K with the command /F,C(olumn),K↵ ,U(ser-defined)1↵. Use the same command to format column L except substitute L↵ for K↵ .

4. Format column M with the command /F,C(olumn),M↵ ,U(ser-defined)2↵. Format column N with the same command except substitute N↵ for M↵ .

Once again S(ave) your revised Wardrobe Planner spreadsheet as filename WARDRB1 by overwriting the existing WARDRB1.CAL file.

IF to Display Messages Based on a Condition

L(oad) filename WARDRB1 if your screen does not already display this spreadsheet duplicated in figure 3.

Let's add three messages to the Wardrobe Planner spreadsheet:

1. A message to indicate excess baggage weight (number in cell N60 greater than a predetermined weight).
2. A message to identify items in column A that were not selected to be worn (no entry in column K).
3. A message to identify the possible need for taking additional clothing (number in column K greater than that in column L).

Use the space below cell N60 for message 1; column O for messages 2 and 3. Message 1 will be ERROR: WT>35; message 2, NOT USED; message 3, TAKE MORE.

In cell M61, enter the formula IF(N60>35,(''ERROR:''),0). Cell N61 gets the formula IF(N60>35,(''WT>35''),0). Two cells are needed for this error mes-

FIGURE 3

FIGURE 1 WITH USER DEFINED FORMAT CHANGES IN COLUMNS K THROUGH N

ITEM DESCRIPTION	NO. OF TIMES WORN EACH DAY: MON	TU	WED	TH	FRI	SAT	SUN	TOTAL TIMES WORN	NO. ITEMS TAKEN	WT. PER ITEM (LB)	TOTAL WT. (LB)
SUITS:											
BLUE	1							1	1	3.0	3.0
GREY PIN				1				1	1	3.0	3.0
TUX			1					1	1	3.0	3.0
JACKETS:											
BLUE BLAZER		1			1			2	1	1.5	1.5
GREY HERRINGBONE			1					1	1	1.6	1.6
BROWN TWEED						1		1	1	1.5	1.5
TIES:											
SOLID BROWN						1		1	1	.1	.1
BLUE/RED STRIPE	1		1	1				3	1	.1	.1
BLUE/TAN STRIPE		1						1	1	.1	.1
BLACK BOW			1					1	1	.1	.1
SHIRTS:											
WHITE TUX			1					1	1	.5	.5
WHITE DRESS	1		1	1				3	1	.5	.5
BLUE BUTTONDOWN		1			1	1		3	1	.5	.5
DENIM		1						1	1	.5	.5
WHITE PULLOVER				1				1	1	.5	.5
COLORED PULLOVER										.5	
SWEATSHIRT						1		1	1	.5	.5
BELTS:											
BLACK	1		2	1				4	1	.2	.2
BROWN		1			1	1		3	1	.2	.2
WHITE		1		1		1		3	1	.2	.2
TROUSERS:											
GREY DRESS		1	1					2	1	1.0	1.0
BROWN DRESS						1		1	1	1.0	1.0
TAN DRESS					1			1	1	1.0	1.0
WHITE CASUAL				1				1	1	1.0	1.0
JEANS		1						1	1	1.0	1.0
BLUE CORD						1		1	1	1.0	1.0
SOCKS:											
BLACK	1	1	2	1	1	1		7	1	.1	.1
WHITE		1		1		1		3	1	.1	.1
SHOES:											
BROWN DRESS		1				1		2	1	2.0	2.0
BROWN CASUAL										1.7	
BLACK DRESS	1		2	1				4	1	2.0	2.0
TAN CASUAL					1			1	1	1.7	1.7
WHITE CASUAL				1				1	1	1.7	1.7
SNEAKERS		1				1		2	1	1.6	1.6
									TOTAL WEIGHT		32.8

Figure 3. *User-defined format changes produce a neater display and printout of the spreadsheet.*

```
  |       A       | | C|| D|| E|| F|| G|| H|| I|  | K || L || M || N ||    O   |
 1|                                FIGURE 4
 2|                                --------
 3|          FIGURE 3 WITH PROMPT MESSAGES IN COLUMN O AND CELLS M61,N61
 4|          ---------------------------------------------------------
 5|                                                                  WT.
 6|                 | NO. OF TIMES WORN EACH DAY |  TOTAL   NO.   PER TOTAL
 7|                 | -------------------------- | TIMES ITEMS ITEM  WT.
 8|ITEM DESCRIPTION | MON  TU WED  TH FRI SAT SUN |  WORN TAKEN (LB) (LB)
 9|---------------- | --- --- --- --- --- --- --- | ----- ----- ----- -----
10|SUITS:           |                             |                          NOT USED
11|BLUE             |   1                         |     1     1   3.0   3.0
12|GREY PIN         |             1               |     1     1   3.0   3.0
13|TUX              |         1                   |     1     1   3.0   3.0
14|                 |                             |                          NOT USED
15|JACKETS:         |                             |                          NOT USED
16|BLUE BLAZER      |     1           1           |     2     1   1.5   1.5 TAKE MORE
17|GREY HERRINGBONE |         1                   |     1     1   1.6   1.6
18|BROWN TWEED      |                     1       |     1     1   1.5   1.5
19|                 |                             |                          NOT USED
20|TIES:            |                             |                          NOT USED
21|SOLID BROWN      |                     1       |     1     1   .1    .1
22|BLUE/RED STRIPE  |   1     1   1               |     3     1   .1    .1 TAKE MORE
23|BLUE/TAN STRIPE  |     1                       |     1     1   .1    .1
24|BLACK BOW        |         1                   |     1     1   .1    .1
25|                 |                             |                          NOT USED
26|SHIRTS:          |                             |                          NOT USED
27|WHITE TUX        |         1                   |     1     1   .5    .5
28|WHITE DRESS      |   1     1   1               |     3     1   .5    .5 TAKE MORE
29|BLUE BUTTONDOWN  |     1           1   1       |     3     1   .5    .5 TAKE MORE
30|DENIM            |     1                       |     1     1   .5    .5
31|WHITE PULLOVER   |             1               |     1     1   .5    .5
32|COLORED PULLOVER |                             |                 .5       NOT USED
33|SWEATSHIRT       |                     1       |     1     1   .5    .5
34|                 |                             |                          NOT USED
35|BELTS:           |                             |                          NOT USED
36|BLACK            |   1     2   1               |     4     1   .2    .2 TAKE MORE
37|BROWN            |     1           1   1       |     3     1   .2    .2 TAKE MORE
38|WHITE            |     1       1       1       |     3     1   .2    .2 TAKE MORE
39|                 |                             |                          NOT USED
40|TROUSERS:        |                             |                          NOT USED
41|GREY DRESS       |     1   1                   |     2     1   1.0   1.0 TAKE MORE
42|BROWN DRESS      |                     1       |     1     1   1.0   1.0
43|TAN DRESS        |                 1           |     1     1   1.0   1.0
44|WHITE CASUAL     |             1               |     1     1   1.0   1.0
45|JEANS            |     1                       |     1     1   1.0   1.0
46|BLUE CORD        |                     1       |     1     1   1.0   1.0
47|                 |                             |                          NOT USED
48|SOCKS:           |                             |                          NOT USED
49|BLACK            |   1   1   2   1   1   1     |     7     1   .1    .1 TAKE MORE
50|WHITE            |     1       1       1       |     3     1   .1    .1 TAKE MORE
51|                 |                             |                          NOT USED
52|SHOES:           |                             |                          NOT USED
53|BROWN DRESS      |     1                   1   |     2     1   2.0   2.0 TAKE MORE
54|BROWN CASUAL     |                             |                 1.7      NOT USED
55|BLACK DRESS      |   1     2   1               |     4     1   2.0   2.0 TAKE MORE
56|TAN CASUAL       |                 1           |     1     1   1.7   1.7
57|WHITE CASUAL     |             1               |     1     1   1.7   1.7
58|SNEAKERS         |     1                   1   |     2     1   1.6   1.6 TAKE MORE
59|                 |                             |                          -----
60|                 |                             |          TOTAL WEIGHT    32.8
61|
```

Figure 4. *The spreadsheet with prompting messages in column O and cells M61 and N61.*

sage because ERROR: WT>35, at twelve characters wide, will not fit in column N (at six spaces wide).

Scroll your screen to display column O. When working with column O you will find it helpful to split your screen and synchronize it vertically: column A on the left of the split, column O on the extreme right side of your split screen. Split your screen as follows: set your cursor at column C, use the commands /W,V(ertical) followed by /W,S(ynchronize).

The spreadsheet helps you choose your wardrobe, counts the number of times a garment is planned to be worn, and calculates the weight of clothing taken.

Use the command /F,C(olumn),0↵ ,10↵ to make column O 10 spaces wide (error message TAKE MORE needs nine digits plus one to separate the text from numbers in column N). Also format column O for User-defined formats matrix column 1 with the command /F,C(olumn),0↵ ,U(ser-defined)1↵ .

Enter the following formula in cell O10:

```
IF(K10=0,(''NOT USED''),
IF(AND(K10<>0,L10<K10),
("TAKE MORE"),0)).
```

An alternate formula giving the same results is: IF(K10=0,(''NOT USED''),IF(L10<K10,(''TAKE MORE''),0)).

The above formula's logic is: If an item is not chosen to be worn, display NOT USED; if the item is chosen to be worn more times than the number taken, display TAKE MORE, otherwise display 0. (User-defined formats option for column O suppresses the 0.)

Replicate cell O10's formula to cells O11 through O58 with the command /R,O10,O11:O58↵ .

Your screen display should now duplicate figure 4. Figure 5 displays the formulas in column O. Note the absence of entries in cells M61 and N61. Although formulas in cells M61 and N61 are set to display 0 (the number in cell N60 is less than 35), columns M and N are formatted to suppress zeros.

Save your revised Wardrobe Planner spreadsheet as filename WARDRB1 by overwriting the existing WARDRB1.CAL file.

Column Calculation vs. Row Calculation

L(oad) filename WARDRB1 and your screen display should duplicate figure 4.

Wardrobe Planner has determined that several clothing items are planned to be worn more than once (numbers in column K). Now you are ready to change some numbers in column L to take more than the 1 automatically calculated.

Enter the number 3 in cell L28, 3 in cell L29, 4 in cell L49, 3 in cell L50. Total weight in cell N60 should immediately change to 35.3; error message ERROR: WT>35 appears in cells M61 and N61. Your screen display should be the same as figure 6.

Now clear your screen with the /Z,Y(es) command and reload WARDRB1. Figure 4 should match your screen display.

Change your spreadsheet for column calculation with the command /G,C(ol). Enter 3 in cell L55. Cell N60 should change to 36.8; error message WT>35 appears in cell N61. What happened to the message ERROR: in cell N61?

Here is the explanation for why you should specify row calculation when you set up your Wardrobe Planner spreadsheet.

Row calculation evaluates formulas in columns K, L, N, and O in the following sequence: K10, L10, N10, O10, K11, L11, N11, O11, K12, ... K58, L58, N58, O58, N60, M61, N61. Column calculation evaluates these formulas in this sequence: K10, K11, K12, ... K58, L10, L11, L12 ... L58, M61, N10, N11, N12, ... N58, N60, N61, O10, O11, O12, ... O58.

Formulas in cells M61 and N61 depend on the value of cell N60, but with column calculation, cell M61 is recalculated before cell N60 (cell M61 is recalculated based on the value of 32.8 in cell N60); cell N61 is recalculated after cell N60's value has changed to 36.8. Hence the incorrect

```
                                O
1:                            FIGURE 5
2:                            --------
3:          FORMULAS USED IN FIGURE 3, COLUMN O
4:          ----------------------------------
5:
6:
7:
8:
9:
10: IF(K10=0,("NOT USED"),IF(AND(K10()0,L10(K10),("TAKE MORE"),0))
11: IF(K11=0,("NOT USED"),IF(AND(K11()0,L11(K11),("TAKE MORE"),0))
12: IF(K12=0,("NOT USED"),IF(AND(K12()0,L12(K12),("TAKE MORE"),0))
13: IF(K13=0,("NOT USED"),IF(AND(K13()0,L13(K13),("TAKE MORE"),0))
14: IF(K14=0,("NOT USED"),IF(AND(K14()0,L14(K14),("TAKE MORE"),0))
15: IF(K15=0,("NOT USED"),IF(AND(K15()0,L15(K15),("TAKE MORE"),0))
16: IF(K16=0,("NOT USED"),IF(AND(K16()0,L16(K16),("TAKE MORE"),0))
17: IF(K17=0,("NOT USED"),IF(AND(K17()0,L17(K17),("TAKE MORE"),0))
18: IF(K18=0,("NOT USED"),IF(AND(K18()0,L18(K18),("TAKE MORE"),0))
19: IF(K19=0,("NOT USED"),IF(AND(K19()0,L19(K19),("TAKE MORE"),0))
20: IF(K20=0,("NOT USED"),IF(AND(K20()0,L20(K20),("TAKE MORE"),0))
21: IF(K21=0,("NOT USED"),IF(AND(K21()0,L21(K21),("TAKE MORE"),0))
22: IF(K22=0,("NOT USED"),IF(AND(K22()0,L22(K22),("TAKE MORE"),0))
23: IF(K23=0,("NOT USED"),IF(AND(K23()0,L23(K23),("TAKE MORE"),0))
24: IF(K24=0,("NOT USED"),IF(AND(K24()0,L24(K24),("TAKE MORE"),0))
25: IF(K25=0,("NOT USED"),IF(AND(K25()0,L25(K25),("TAKE MORE"),0))
26: IF(K26=0,("NOT USED"),IF(AND(K26()0,L26(K26),("TAKE MORE"),0))
27: IF(K27=0,("NOT USED"),IF(AND(K27()0,L27(K27),("TAKE MORE"),0))
28: IF(K28=0,("NOT USED"),IF(AND(K28()0,L28(K28),("TAKE MORE"),0))
29: IF(K29=0,("NOT USED"),IF(AND(K29()0,L29(K29),("TAKE MORE"),0))
30: IF(K30=0,("NOT USED"),IF(AND(K30()0,L30(K30),("TAKE MORE"),0))
31: IF(K31=0,("NOT USED"),IF(AND(K31()0,L31(K31),("TAKE MORE"),0))
32: IF(K32=0,("NOT USED"),IF(AND(K32()0,L32(K32),("TAKE MORE"),0))
33: IF(K33=0,("NOT USED"),IF(AND(K33()0,L33(K33),("TAKE MORE"),0))
34: IF(K34=0,("NOT USED"),IF(AND(K34()0,L34(K34),("TAKE MORE"),0))
35: IF(K35=0,("NOT USED"),IF(AND(K35()0,L35(K35),("TAKE MORE"),0))
36: IF(K36=0,("NOT USED"),IF(AND(K36()0,L36(K36),("TAKE MORE"),0))
37: IF(K37=0,("NOT USED"),IF(AND(K37()0,L37(K37),("TAKE MORE"),0))
38: IF(K38=0,("NOT USED"),IF(AND(K38()0,L38(K38),("TAKE MORE"),0))
39: IF(K39=0,("NOT USED"),IF(AND(K39()0,L39(K39),("TAKE MORE"),0))
40: IF(K40=0,("NOT USED"),IF(AND(K40()0,L40(K40),("TAKE MORE"),0))
41: IF(K41=0,("NOT USED"),IF(AND(K41()0,L41(K41),("TAKE MORE"),0))
42: IF(K42=0,("NOT USED"),IF(AND(K42()0,L42(K42),("TAKE MORE"),0))
43: IF(K43=0,("NOT USED"),IF(AND(K43()0,L43(K43),("TAKE MORE"),0))
44: IF(K44=0,("NOT USED"),IF(AND(K44()0,L44(K44),("TAKE MORE"),0))
45: IF(K45=0,("NOT USED"),IF(AND(K45()0,L45(K45),("TAKE MORE"),0))
46: IF(K46=0,("NOT USED"),IF(AND(K46()0,L46(K46),("TAKE MORE"),0))
47: IF(K47=0,("NOT USED"),IF(AND(K47()0,L47(K47),("TAKE MORE"),0))
48: IF(K48=0,("NOT USED"),IF(AND(K48()0,L48(K48),("TAKE MORE"),0))
49: IF(K49=0,("NOT USED"),IF(AND(K49()0,L49(K49),("TAKE MORE"),0))
50: IF(K50=0,("NOT USED"),IF(AND(K50()0,L50(K50),("TAKE MORE"),0))
51: IF(K51=0,("NOT USED"),IF(AND(K51()0,L51(K51),("TAKE MORE"),0))
52: IF(K52=0,("NOT USED"),IF(AND(K52()0,L52(K52),("TAKE MORE"),0))
53: IF(K53=0,("NOT USED"),IF(AND(K53()0,L53(K53),("TAKE MORE"),0))
54: IF(K54=0,("NOT USED"),IF(AND(K54()0,L54(K54),("TAKE MORE"),0))
55: IF(K55=0,("NOT USED"),IF(AND(K55()0,L55(K55),("TAKE MORE"),0))
56: IF(K56=0,("NOT USED"),IF(AND(K56()0,L56(K56),("TAKE MORE"),0))
57: IF(K57=0,("NOT USED"),IF(AND(K57()0,L57(K57),("TAKE MORE"),0))
58: IF(K58=0,("NOT USED"),IF(AND(K58()0,L58(K58),("TAKE MORE"),0))
```

Figure 5. *A list of the formulas in column O of figure 4.*

(blank) value in cell M61, and the correct value (WT)35) in cell N61.

With row calculation, the value of cell N60 is recalculated before formulas in cells M61 and N61 are evaluated, yielding correct results for cells M61 and N61.

Clear your screen with the /Z,Y(es) command.

A Final Touchup

Your screen display should duplicate figure 4 (otherwise, reload the spreadsheet).

Column O is too cluttered with messages. Messages are inappropriate in rows 10, 14, 15, 19, 20, 25, 26, 34, 35, 39, 40, 47, 48, 51, 52: no clothing items appear in column A.

We'll eliminate message displays in the above rows by expanding formulas in column O to calculate zero if no number appears in column M. Change cell O10's formula to the following (all on one line):

```
IF(M10=0,0,IF(K10=0,(''NOT
USED''),
IF(AND(K10<>0,L10<K10),
(''TAKE MORE''),0)))
```

Replicate cell O10 to cells O11 through O58 with the command:

```
/R,O10↵ ,O11:O58↵
```

Irrelevant messages in column O immediately disappear as shown in figure 7.

Save your final revised spreadsheet as filename WARDRB1 by overwriting the existing WARDRB1 file. You can now use the final Wardrobe Planner spreadsheet to plan your own wardrobe.

If you got this far, and you understand all the commands and manipulations, congratulations: you are approaching mastery of electronic spreadsheets. If you have questions, write to me at this magazine, or at State University of New York at Stony Brook, Stony Brook, NY 11794.

O

FIGURE 6

FIGURE 4 WITH USER INSERTED NUMBERS IN COLUMN L

	ITEM DESCRIPTION	NO. OF TIMES WORN EACH DAY							TOTAL TIMES WORN	NO. ITEMS TAKEN	WT. PER ITEM (LB)	TOTAL WT. (LB)	
		MON	TU	WED	TH	FRI	SAT	SUN					
10	SUITS:												NOT USED
11	BLUE	1							1	1	3.0	3.0	
12	GREY PIN				1				1	1	3.0	3.0	
13	TUX			1					1	1	3.0	3.0	
14													NOT USED
15	JACKETS:												NOT USED
16	BLUE BLAZER		1			1			2	1	1.5	1.5	TAKE MORE
17	GREY HERRINGBONE			1					1	1	1.6	1.6	
18	BROWN TWEED						1		1	1	1.5	1.5	
19													NOT USED
20	TIES:												NOT USED
21	SOLID BROWN						1		1	1	.1	.1	
22	BLUE/RED STRIPE	1		1	1				3	1	.1	.1	TAKE MORE
23	BLUE/TAN STRIPE		1						1	1	.1	.1	
24	BLACK BOW			1					1	1	.1	.1	
25													NOT USED
26	SHIRTS:												NOT USED
27	WHITE TUX			1					1	1	.5	.5	
28	WHITE DRESS	1		1	1				3	3	.5	1.5	
29	BLUE BUTTONDOWN		1			1	1		3	3	.5	1.5	
30	DENIM		1						1	1	.5	.5	
31	WHITE PULLOVER				1				1	1	.5	.5	
32	COLORED PULLOVER										.5		NOT USED
33	SWEATSHIRT						1		1	1	.5	.5	
34													NOT USED
35	BELTS:												NOT USED
36	BLACK	1		2	1				4	1	.2	.2	TAKE MORE
37	BROWN		1			1	1		3	1	.2	.2	TAKE MORE
38	WHITE		1		1		1		3	1	.2	.2	TAKE MORE
39													NOT USED
40	TROUSERS:												NOT USED
41	GREY DRESS		1	1					2	1	1.0	1.0	TAKE MORE
42	BROWN DRESS						1		1	1	1.0	1.0	
43	TAN DRESS					1			1	1	1.0	1.0	
44	WHITE CASUAL				1				1	1	1.0	1.0	
45	JEANS		1						1	1	1.0	1.0	
46	BLUE CORD						1		1	1	1.0	1.0	
47													NOT USED
48	SOCKS:												NOT USED
49	BLACK	1	1	2	1	1	1		7	4	.1	.4	TAKE MORE
50	WHITE		1		1		1		3	3	.1	.3	
51													NOT USED
52	SHOES:												NOT USED
53	BROWN DRESS		1				1		2	1	2.0	2.0	TAKE MORE
54	BROWN CASUAL										1.7		NOT USED
55	BLACK DRESS	1		2	1				4	1	2.0	2.0	TAKE MORE
56	TAN CASUAL					1			1	1	1.7	1.7	
57	WHITE CASUAL				1				1	1	1.7	1.7	
58	SNEAKERS		1				1		2	1	1.6	1.6	TAKE MORE
59													
60									TOTAL WEIGHT			35.3	
61											ERROR: WT)35		

Figure 6. *Changing some numbers in column L of the Wardrobe Planner.*

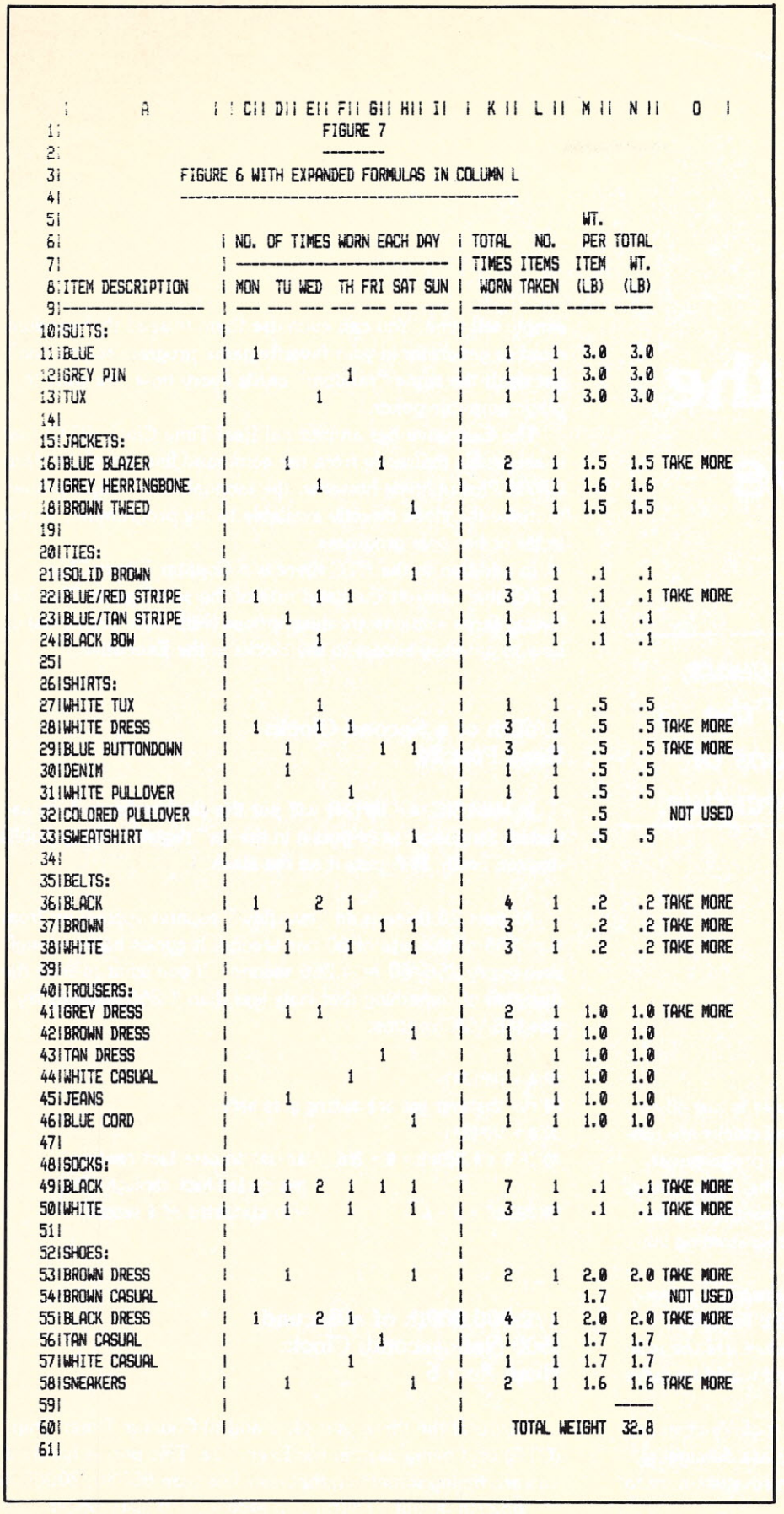


FIGURE 7

FIGURE 6 WITH EXPANDED FORMULAS IN COLUMN L

ITEM DESCRIPTION	NO. OF TIMES WORN EACH DAY							TOTAL TIMES WORN	NO. ITEMS TAKEN	WT. PER ITEM (LB)	TOTAL WT. (LB)	
	MON	TU	WED	TH	FRI	SAT	SUN					
SUITS:												
BLUE	1							1	1	3.0	3.0	
GREY PIN				1				1	1	3.0	3.0	
TUX			1					1	1	3.0	3.0	
JACKETS:												
BLUE BLAZER		1			1			2	1	1.5	1.5	TAKE MORE
GREY HERRINGBONE			1					1	1	1.6	1.6	
BROWN TWEED						1		1	1	1.5	1.5	
TIES:												
SOLID BROWN						1		1	1	.1	.1	
BLUE/RED STRIPE	1		1	1				3	1	.1	.1	TAKE MORE
BLUE/TAN STRIPE		1						1	1	.1	.1	
BLACK BOW			1					1	1	.1	.1	
SHIRTS:												
WHITE TUX			1					1	1	.5	.5	
WHITE DRESS	1		1	1				3	1	.5	.5	TAKE MORE
BLUE BUTTONDOWN		1			1	1		3	1	.5	.5	TAKE MORE
DENIM		1						1	1	.5	.5	
WHITE PULLOVER				1				1	1	.5	.5	
COLORED PULLOVER										.5		NOT USED
SWEATSHIRT						1		1	1	.5	.5	
BELTS:												
BLACK	1		2	1				4	1	.2	.2	TAKE MORE
BROWN		1			1	1		3	1	.2	.2	TAKE MORE
WHITE		1		1		1		3	1	.2	.2	TAKE MORE
TROUSERS:												
GREY DRESS		1	1					2	1	1.0	1.0	TAKE MORE
BROWN DRESS						1		1	1	1.0	1.0	
TAN DRESS					1			1	1	1.0	1.0	
WHITE CASUAL				1				1	1	1.0	1.0	
JEANS		1						1	1	1.0	1.0	
BLUE CORD						1		1	1	1.0	1.0	
SOCKS:												
BLACK	1	1	2	1	1	1		7	1	.1	.1	TAKE MORE
WHITE		1		1		1		3	1	.1	.1	TAKE MORE
SHOES:												
BROWN DRESS		1				1		2	1	2.0	2.0	TAKE MORE
BROWN CASUAL										1.7		NOT USED
BLACK DRESS	1		2	1				4	1	2.0	2.0	TAKE MORE
TAN CASUAL					1			1	1	1.7	1.7	
WHITE CASUAL				1				1	1	1.7	1.7	
SNEAKERS		1				1		2	1	1.6	1.6	TAKE MORE
								TOTAL WEIGHT			32.8	

Figure 7. *After eliminating message displays and expanding formulas in column O (to calculate zero if no number appears in column M).*

Time and the Executive

From nanoseconds to years, you can make use of the time and date functions of CP/M Plus on your Executive.

Gary Burleson

When the Osborne Executive computer is turned on and the system is booted up, several clocks are running. These clocks are easily accessible to the programmer. Whether you need a clock rate of years, months, days, hours, minutes, seconds, 1/60 second, or 1/two-millionths of a second, a few simple commands in a popular programming language make the clock available to you.

No bank switching or complicated programming is necessary. Use MBASIC, assembly language, C/80, Forth-83, Pascal or your favorite language. You could even use the utilities supplied with CP/M Plus, but that method would be more complicated.

A broad range of clock rates is a powerful tool. You can use them to run timing profiles of a program you are debugging. Clock rates can help you pace a real-time control system, or to simply tell time. You can even use them to seed that random number generator in your favorite game program so you don't get dealt the same "random" cards every time you start to play computer poker.

The Executive has an internal Real Time Clock (RTC) that is accessible indirectly from the command line using standard CP/M Plus utilities; however, the manuals don't explain how to make the clock directly available to the programmer to use in his or her own programs.

In addition to the RTC there is a Counter Timer Chip (CTC) that controls the baud rate of the serial ports. The following three sections are descriptions (with code segments) of how to get easy access to the clocks in the Executive.

1/60th of a Second Clock: Read Port 24

In MBASIC, `A = INP(24)` will put the clock value in `A`. In assembly language, `in 24` puts it in the "a" register. In my public domain Forth, `24 P` puts it on the stack.

At port 24 there is an "overflow" counter cycling up from 0 to 255 at the rate of 60 per second. It cycles back through zero every 256/60 = 4.266 seconds. If you want to time the duration of something that lasts less than 4.266 seconds try this MBASIC routine:

```
10 A = INP(24)
20 rem Whatever you are timing goes here.
30 B = INP(24)
40 IF B < A THEN B = B + 256  '{Adjust in case last reading
                              ' has cycled back through zero}
50 RESULT = B - A             '{In sixtieths of a second}
```

1/2,000,000th of a Second (500 Nanosecond) Clock: Read Port 6

Port 6 of the three port (4, 5 and 6) Counter Timer Chip (CTC) isn't being used in the Executive. This port is handy if you are timing something that lasts less than 65536/2000000 = .0327th (about 1/30th) of a second, and lasts longer than 500 nanoseconds. You control port 6 by sending commands to

port 7 (in MBASIC, use the OUT 7, COMMANDVALUE command).

There are four steps involved in using port 6. The first step is to send the command value 184 to port 7 to tell the chip to turn port 6 into a two-byte wide down-counter starting at the value you are now going to send it.

The second step is to send the two-byte initializing value to port 6, least significant byte first. To get the longest timing interval, initialize port 6 to the largest possible two-byte wide value, 65536 decimal. That means each individual byte is 255 decimal, so you use the sequence OUT 6, 255, and OUT 6, 255. The timer is now running.

Later, when you want to read port 6 (third step), send a command OUT 7, 128 which loads the present value of port 6 into a buffer.

The last (fourth) step begins when you read port 6 twice, A=IN 6, and B=IN 6, to first get the least significant byte, then the most significant byte. Next you can create a two-byte value C=A+(B*256) Multiplying by 256 moves the most significant byte 8 bits to the left. You can subtract the most significant byte from 65536 to find out how many two-millionths of a second have elapsed.

Since such a high speed clock isn't normally valuable in a slow language like BASIC, here are two assembly language routines buried in C programming language functions. Don't worry if you don't know the languages. I explain each simple step inside /* and */ comment delimiters. I will define setctc3() and rdctc3() which are functions that can be called by name from a main() program.

```
setctc3()           /* function to initialize */
{                   /* counter-timer chip ("ctc") */
#asm                /* beginning of assembly routine */
mvi     -a,184      /* put 184 in "a" register */
out     -7          /* send command in "a" to control-port 7 */
mvi     -a,255      /* initialize counter with 2 bytes of */
                    -/* all-bits-on - i.e., 65535 decimal */
out     -6
-
mvi     -a,255
out     -6
ret                 -/* return to calling program */
#endasm             /* timer is now running */
}

rdctc3()            /* what we wanted to time has transpired */
{                   /* let's see how long it took */
#asm
mvi     -a,128      /* put read-port-6 commandvalue in "a" */
out     -7          /* send whatever is in "a" to control-port 7 */
in      6           /* get least significant byte in "a" reg. */
mov     -l,a        /* put it in "l" register */
in      6           /* now get most sig. byte */
mov     -h,a        /* function values are returned in "hl" */
ret                 /* so "var = rdctc3()" would put it in var */
#endasm
}
```

The Real Time Clock: From Seconds to Years in High Memory

There are several ways to use the Osborne Executive's real time clock. To emphasize portability between different CP/M Plus computers, use the standard BDOS calls 104 (SET TIME) and 105 (GET TIME). For more arcane purposes the programmer could use a combination of the DATE, GET and PUT utilities. However, for general purposes there is no reason to be so complicated.

The clock is running right there in high memory so you can easily read it and set it by addressing it directly in your program. In BASIC you could use PEEK and POKE; in Pascal and C you could use pointers, and in Forth you would use the fetch and store commands.

At memory location F8F4 (hexadecimal) and F8F5 is a two-byte wide decimal counter keeping track of the number of days elapsed since Jan. 1, 1978. When you turn on the computer this counter is set for a day in 1982 when the system was initialized. This number at F8F4 and F8F5 is the number you use to keep track of the days, months and years (as shown below).

At location F8F6 is a Binary Coded Decimal (BCD) number representing hours. At F8F7 is a BCD number representing minutes. At F8F8 is a BCD number keeping track of seconds. These all start at zero when you turn the computer on.

The only complication for the programmer in handling the hours, minutes and seconds bytes is the BCD to decimal translation. There is a simple way to read and print a value; here is a bare bones BASIC program to read and print out the current seconds count.

```
10 A$ = HEX$(PEEK(&HF8F8))
20 PRINT A$
```

It turns out that the hexadecimal ASCII representation of a BCD number is equal to its decimal value. However, if you need to do math with the BCD value you will need to translate it to decimal. Here is a subroutine to get the seconds value.

```
1000 A = PEEK(&HF8F8)          'A contains the BCD seconds
1010 B = FIX(A / 16) * 10      'Turn 0,16,32,48,... into
                               ' 0,10,20,30,...
1020 C = A MOD 16              'Get the units value
1030 D = B + C                 'D contains the decimal seconds
1040 RETURN
```

Now you could, for instance, subtract the value in D from an earlier value to find elapsed time. Conversely, if you want to set the hours, minutes or seconds you will have to translate a decimal number to BCD before you POKE it into memory.

```
2000 AA = YOURNUMBER
2010 BB = FIX(AA / 10) * 16    'Turn 0,10,20... into
                               ' 0,16,32...
2020 CC = AA MOD 10            'Get units
2030 DD = BB + CC              'DD contains BCD of YOURNUMBER
2040 RETURN
```

You will have to guard against sending an illegal time value to the clock, such as a second or minute value larger than 59 or an hour value larger than 23. The clock does not automatically recover from illegal values.

If you intend to use the days-since-Jan-1-1978 value at memory location F8F4 you needn't worry about BCD because it is a two-byte wide integer decimal:

```
5 DAYS = PEEK(&HF8F4) + (PEEK(&HF8F5) * 256)
```

— will put its value into the variable DAYS. What you do with it depends on how complete a date function you need in your program.

Presume you are writing a control program that will only be needed in 1985. Use the fact that Jan. 1, 1985 is 2558 days after Jan. 1, 1978. Your DAYS value would start out at 2558. Since you probably won't leave the computer on all year, every time you turn it on you will either have to use a subroutine of your own creation to reinitialize location F8F4 and F8F5 to 2558+ (the number of days since Jan. 1, 1985), or you will have to use the CP/M Plus DATE SET utility before you start your program. Since the first alternative requires you to make some special input-format programming decisions, presume you chose the second alternative.

After three arrays have been set up and initialized the date function is simple.

```
10 DIM INDEX%(12)  'This array will contain 2558, 2558 + the
11                 'number of days in January, that number +
12                 'the number of days in February, etc..
13                 'until a final out of range value after Dec.
14
20 DIM WEEKDAY$(7),MONTH$(12)  'String arrays containing names of
21                             'weekdays and months
30 DATA 2558,2589,2617,2648,2678,2709
31 DATA 2739,2770,2801,2831,2862,2892,6000
32 '
40 FOR I = 0 TO 12   'Initialize INDEX%()
50 READ INDEX%(I)
60 NEXT I
61 '
70 DATA "Tuesday", "Wednesday", "Thursday", "Friday"
71 DATA "Saturday", "Sunday", "Monday"
72 '
80 FOR I = 0 TO 6   'Initialize WEEKDAY$()
90 READ WEEKDAY$(I)   'The first day in 1985 is Tuesday
100 NEXT I
101 '
110 DATA "January", "February", "March", "April", "May", "June",
"July"
111 DATA "August", "September", "October", "November", "December"
112 DATA "Out of range"
113 '
120 FOR I = 0 TO 12   'Initialize MONTH$()
130 READ MONTH$(I)
140 NEXT I
```

Now its just a matter of using the value you found in DAYS above to search through the arrays:

```
145 I = 0
150 WHILE INDEX%(I) < DAYS   'Find index for Month array
155 I = I + 1
160 WEND
170 MONTHINDEX = I - 1
171 '
180 DAYNUM = (DAYS - 2558) MOD 7  'Find index for Weekday array
181 '
190 MONTHNAME$ = MONTH$( MONTHINDEX )
200 DATE = DAYS - INDEX%( MONTHINDEX ) + 1
210 DAYNAME$ = WEEKDAY$( DAYNUM )
```

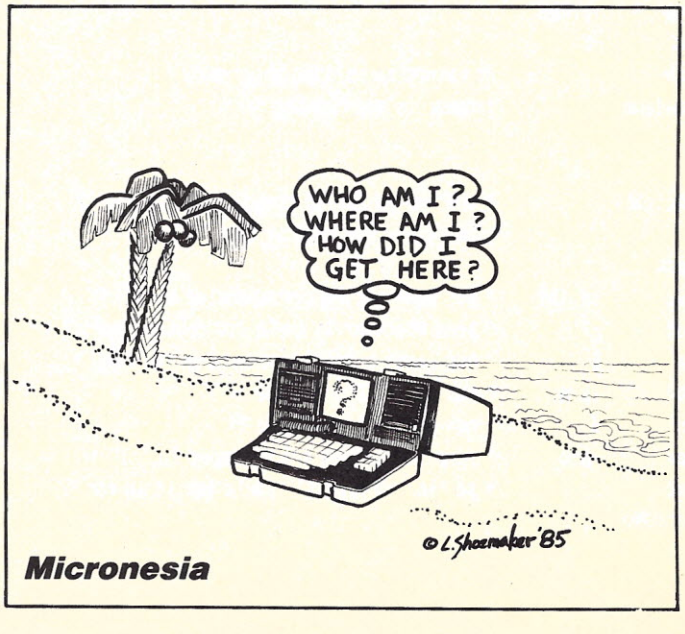
The last three lines are the values you need. To use a time span of more than one year you could add a year array. All of the above routines could have been written several other ways, of course. For the sake of clarity and simple examples, these routines make no illegal value checks.

If you planned to use your control program to run a robot or some other mechanism in the world outside the computer, you would have to integrate the timer routines with a port driver. That is a subject for another article.

o

Forth-83 was written by Harry Laxen and Michael Perry of the Forth Interest Group in Hayward, California.

C/80 is from The Software Toolworks, 15233 Ventura Boulevard, Suite 1118, Sherman Oaks, California 91403.



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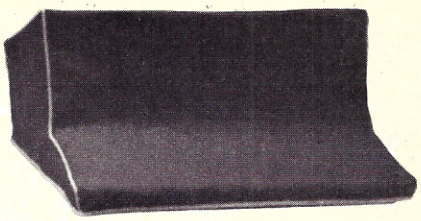

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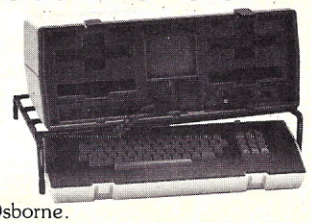

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Wizard

Keeping On Track: Drive Alignment

How to do disk drive alignment on Siemens, MPI and ALPS drives.

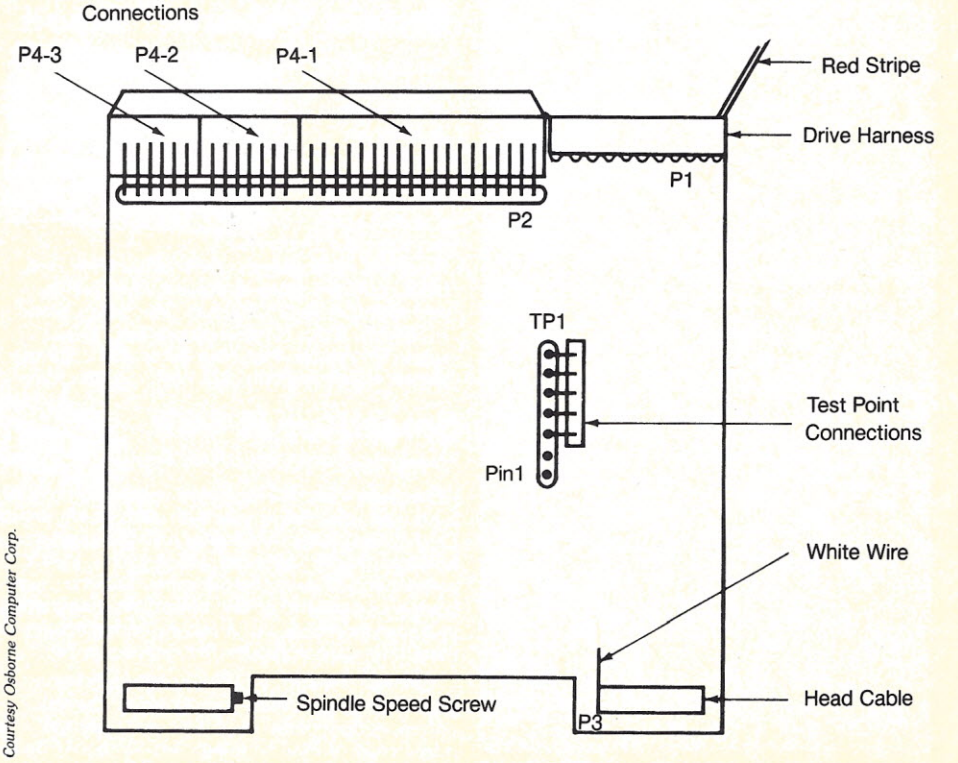
Brad Baldwin

Once upon a time in the Valley of Silicon, there lived an avid "Do-It-Yourselfer." This person tuned and maintained the family carriage, remodeled his castle and repaired home appliances, such as the rack and electric drawbridge opener. Numerous books on the subject simplified the tasks by providing detailed instructions and specifications.

Then one day it came time to service the omnipotent and loyal Home Computer. "Ah hah!," thought our intrepid companion of transportability, "I will scurry over to yonder local computer book store and eke out several titles on the subject." To his dismay, the journey was in vain. Although the shop carried more books than Sir Golden Arches has sold McNuggets, not one title could be found that offered an in-depth look at DIY computer servicing.

*Sure, books on computer repair did exist (*The Plain English Repair and Maintenance Guide for Home Computers, *by Henry F. Beechhold;* Troubleshooting & Repairing Personal Computers, *by Art Margolis), but they were either incomplete, not product-specific enough or simply out-of-date. Even the evil Lord IBM, with his awe-inspiring influence over Silicon Kingdom, could only command one or two half-hearted attempts at specific PC repair manuals. Moreover, none of the books, IBM or otherwise, carried information on disk drive repairs — the most mechanical part of the system.*

By this time, many pundits will have

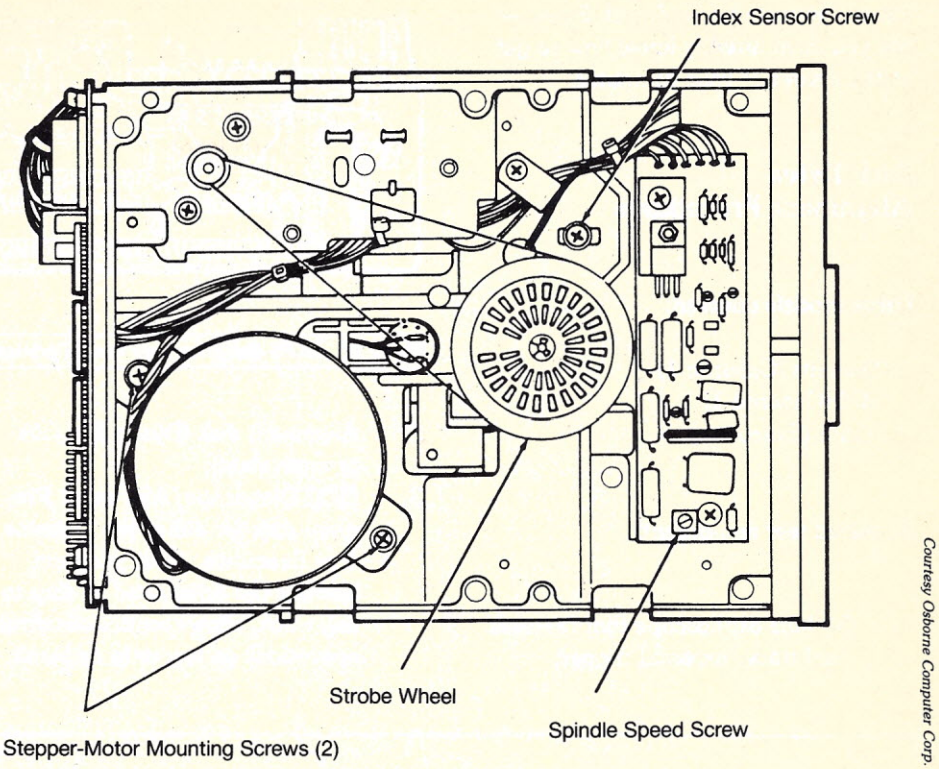


Courtesy Osborne Computer Corp.

Figure 1. *MPI and Siemens disk drive printed circuit board.*

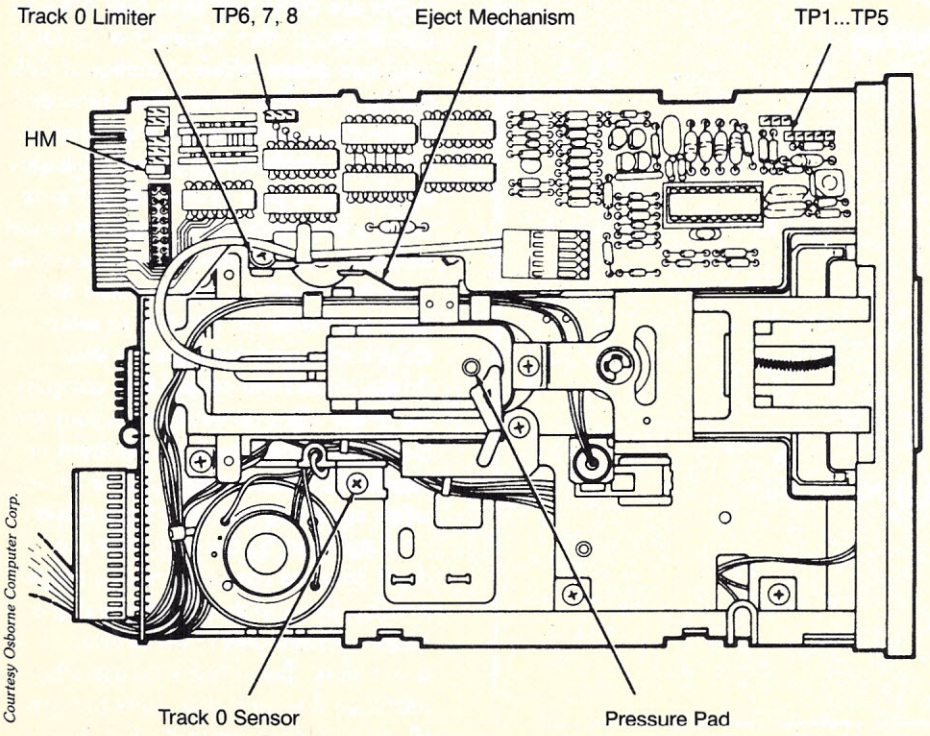
exclaimed, "But look at the complexity of The Computer! How can you expect the slow-witted End-User to understand such a complex subject? These peasants will only succeed in destroying their computer and hurt themselves in the process. Personal Computer repair also requires the knowledge of specialized test equipment — far beyond their mental capacity."

To which our heroic knight replied, "Ask that question after you've visited your neighborhood carriage parts store. Dozens of product-specific repair manuals are available that offer detailed help on all facets of vehicle repair. Publishers Sir Chilton, Sir Clymer and Sir Peterson, for example, have made fortunes by selling step-by-step, detailed service manuals to information-hungry carriage owners." He adds that threats of a novice mechanic's injury (hand in moving fan), damage to vehicle (pistons installed upside down) and owner's need for specialized tools (hydraulic jacks, timing lights, micrometers) did not stop Sir Chilton and others from entering the market.



Courtesy Osborne Computer Corp.

Figure 2. *ALPS disk drive, bottom view.*



Courtesy Osborne Computer Corp.

Figure 3. *ALPS disk drive, top view.*

Even so, it is with a measured amount of editorial risk that the Wizard enters the fray with a highly technical "how-to" article on aligning disk drives. Not all readers, after all, are interested in opening up a computer and probing around. Furthermore, I realize that not everyone has ready access to an oscilloscope, an expensive but required tool for aligning disk drives.

In any event, some of our technically-minded readers have the test equipment and want to add disk drive alignment to their repertoire of computer skills. These folks also possess the technical background that: 1) guards against fingers touching power supply components; 2) prevents test probes from shorting across components; and 3) generally ensures that both user and computer will come through the experience intact.

Due to space limitations in *The Portable Companion*, text not directly relat-

ed to alignment procedures has been either eliminated or reduced. Sorry — but you must already know how to get at the insides of your computer.

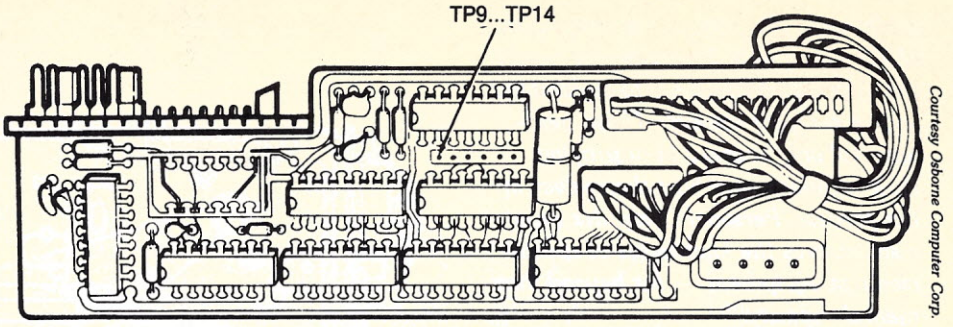
Disk Drive Alignment Procedures

Drive models covered:

Siemens (Osborne 1)
MPI (Osborne 1)
ALPS (Executive)

Required test equipment:

1. 50 Mhz oscilloscope that features dual-trace, external trigger;
2. Alignment disk (Dysan 224/2A or equivalent);
3. OCC Diagnostic/Alignment Program disk for either the Osborne 1 or Executive. (This program permits the drive head to step to any track, allows continuous drive operations on test data or blank tracks without time-outs and can step repeatedly between two tracks.)
4. A fluorescent light.



Courtesy Osborne Computer Corp.

Figure 4. *ALPS disk drive, rear view of printed circuit board.*

Radial Alignment, Index Sensor Timing, Azimuth and Amplitude

Probe Connections

	Ground	Channel A	Channel B	Ext. Trigger
Siemens/MPI	6	7	8	5
ALPS	TP5	TP1	TP2	12

Oscilloscope Settings

AC internal coupling
NORM trigger mode
External trigger source
Positive slope
AC coupling switch
Vertical Mode ADD
Invert Channel B

Radial Alignment (track 16)
0.1 volt/div
20 milliseconds/div sweep

Index Sensor Timing Adjustment (track 1) 0.2 volt/div
50 microseconds/div

Azimuth (track 34) 0.5 volt/div
0.5 millisec/div sweep

Figure 5. *Probe connections and oscilloscope settings to test radial alignment, index sensor timing, Azimuth and Amplitude.*

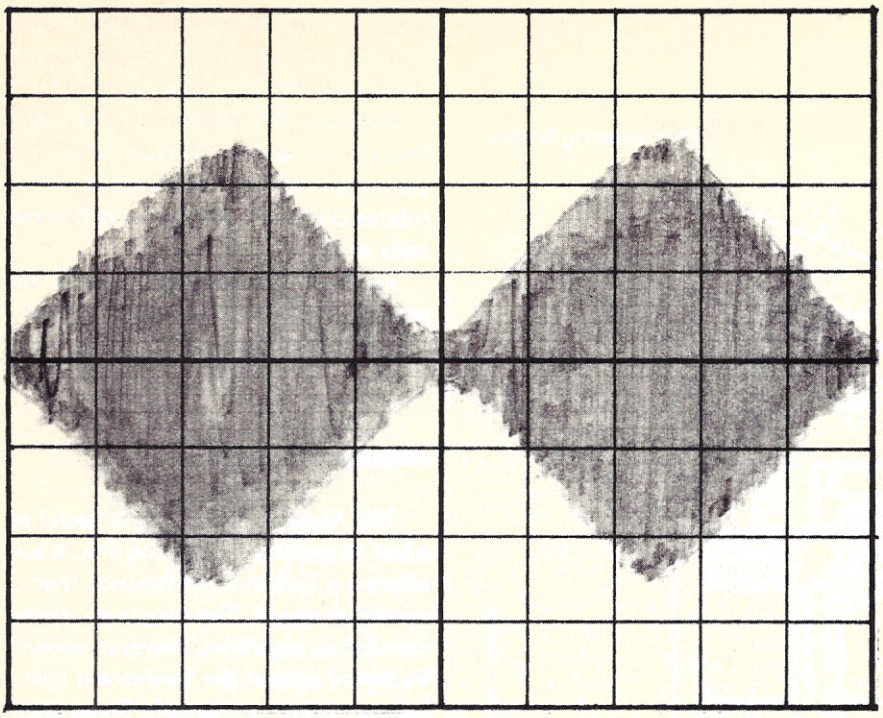
We'll check the six major areas of disk head alignment. The tests are:

1. Spindle Speed
2. Read/Write Head Radial Alignment
3. Track 0 Limiter Adjustment
4. Track 0 Sensor Adjustment
5. Index Sensor Timing Adjustment
6. Head Azimuth

A few observations before starting. Disks are aligned using an industry-standard alignment disk so that the adjustments are consistent from disk drive to disk drive. In other words, even if OCC used two dozen different makes of disk drives in the Executive, disks recorded in one drive should work in another. In addition, purchased software packages should run in your drives without problems; a disk recorded in the A drive will also work in the B drive, and vice versa.

A few situations that indicate disk drive problems: an inability to swap disks back and forth between your drives, disks from other OCC computers in the office do not work in your machine (and vice-versa), intermittent or constantly occurring read/write errors when accessing just one of the drives.

Watch out, by the way, that you don't boot the computer with a single-density disk and then try accessing a double-density disk in the B drive — it won't work. Some Osborne users have mistaken this for a disk drive problem. (Booting in double-density and then reading single-density disks is acceptable.)



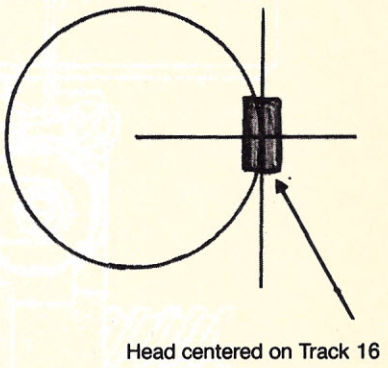


Figure 6A. *Cat-eye radial alignment, equal lobes, with disk drive head centered on track 16.*

Other notes:

- Clean the drive head with 97 percent isopropyl alcohol (sold from behind the drugstore counter, with no prescription required) before testing drive alignment. This first step may simply solve any drive read/write problems. If you use the easily available 70 percent (with 30 percent unidentified impurities) isopropyl alcohol sold over the counter, you may still have dirty head problems.
- Do not bend back the pressure-pad — you'll weaken the arm spring.
- Do not connect or disconnect drive cables with the power turned on.
- Volts/div and secs/div oscilloscope settings may vary with your setup.
- Perform the tests in the order given and check everything when finished.
- "If It Ain't Broke, Don't Fix It!"

OCC used the same disk drive electronics board for both Siemens and MPI drives. As a result, the test points and electronic measurements are identical; however, the mechanical adjustments are different.

1) Spindle Speed Adjustment: Siemens, MPI and ALPS

Three techniques are available that set spindle speed to the standard 200 ms per revolution: Fluorescent light, Alignment Program timer and scope measurement of the index pulse. You only need to use one.

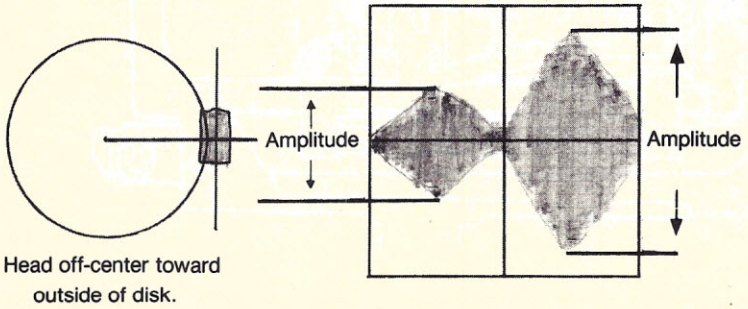


Figure 6B. *Disk drive head off-center toward outside of disk.*

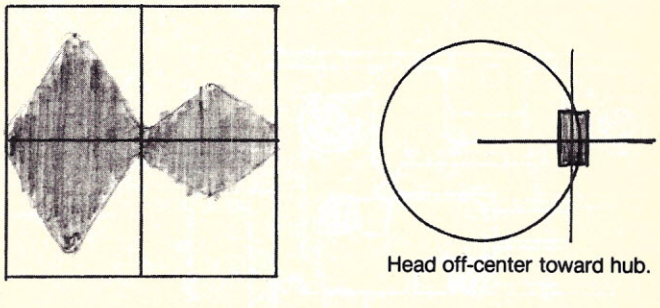
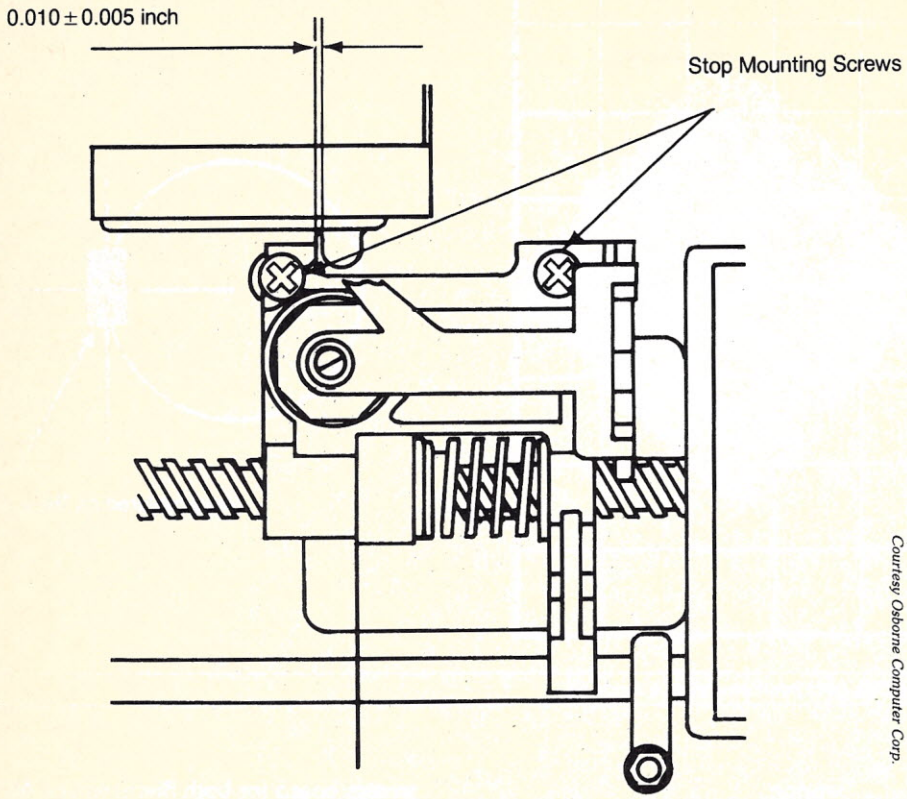


Figure 6C. *Disk drive head off-center toward hub.*



Courtesy Osborne Computer Corp.

Figure 7. *Siemens track 0 limiter adjustment.*

Fluorescent Light

The fluorescent light is the easiest method and enables anyone to test spindle speed. The drive manufacturers have cleverly made use of the light's 60 Hz or 50 Hz flickering. By shining the light on strobe markings built into the spinning drive strobe wheel, the eye can see and measure spindle speed.

To continuously spin the spindle on an Osborne 1, type `DIR` on a non-formatted disk. With the Executive, you have only ten seconds or so before the disk does a time-out, but that still may be enough time to check the speed.

Siemens/MPI drives are shown in figure 1. Locate the spindle speed trim control and adjust it so the strobe wheel rotates clockwise 90 degrees in five seconds of time.

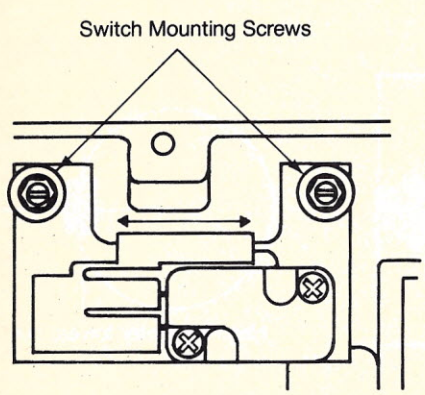
ALPS drive is shown in figure 2. Adjust the trim pot. so the strobe marks appear stationary.

Alignment Program

The Alignment Program is useful as a tool to continually spin the disk. It also offers a a built-in timer function that measures speed. The program's speed calculating algorithm, however, should be tested against the fluorescent light before relying on it heavily. Some timer-based program versions are not terribly accurate.

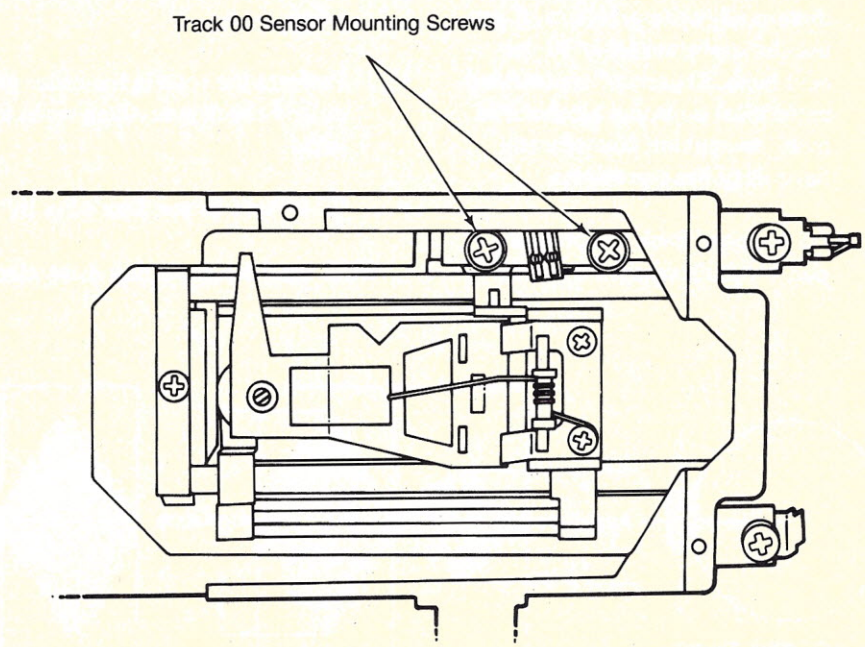
Oscilloscope

Those people with scopes can directly measure index pulses as a means to determine speed. Set the scope for 20



Courtesy Osborne Computer Corp.

Figure 9. *Siemens track 0 sensor adjustment.*



Courtesy Osborne Computer Corp.

Figure 10. *MPI track 0 sensor adjustment.*

Track 0 Sensor Adjustment

Probe Connections

	Ground	Channel A	Channel B
Siemens/MPI	6	4	8
ALPS	TP5	TP6	TP10

Oscilloscope Settings

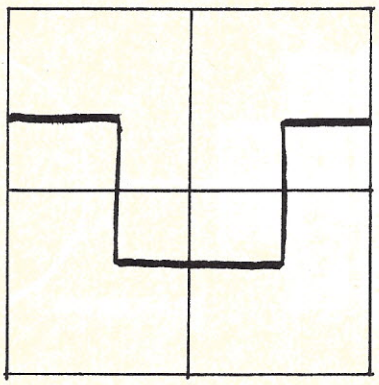
Siemens/MPI

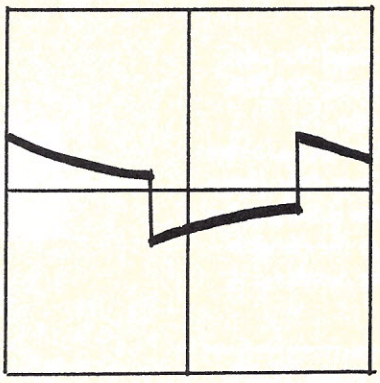
AC internal coupling
Norm trigger mode
Trigger on A
Positive slope
AC coupling switch
Vertical Mode CHOPPED
Channel A 5V/div
Channel B 1V/div
5 milliseconds/div sweep

ALPS

DC internal coupling
Norm trigger mode
Trigger source vertical mode
Positive slope
AC coupling switch
Vertical Mode ADD
Channel A 2V/div
Channel B 2V/div
50 milliseconds/div sweep

Siemens/MPI track 0 sensor:
Negative: 30±5 milliseconds





ALPS track 0 sensor:
Negative signal

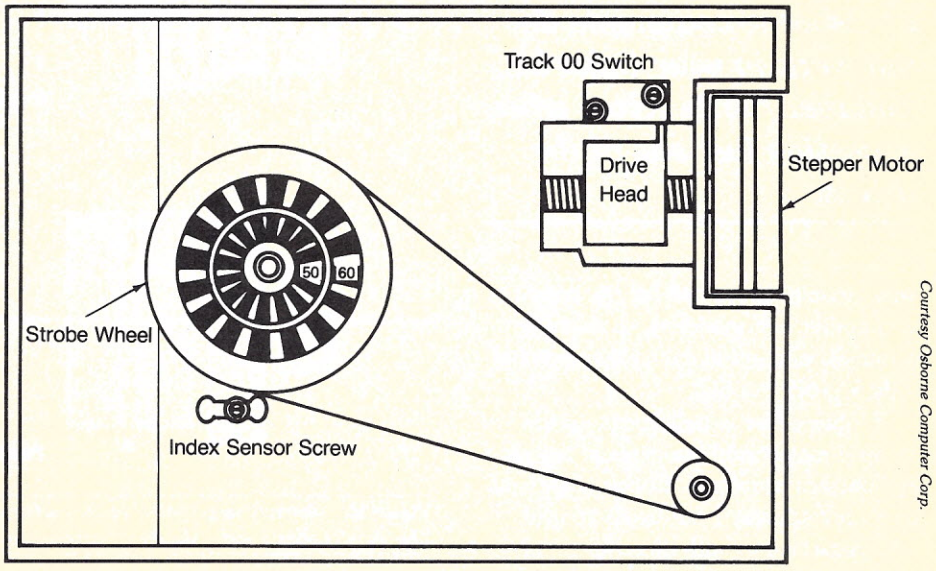
Figure 8. *Track 0 sensor adjustment probe connections and oscilloscope settings.*

Figure 11. *Siemens disk drive, bottom view.*

ms sweep divisions and you should count 10 divisions between pulses for the 200 ms speed/rev.

Osborne 1: Attach a probe at test point 5 and the ground connection at TP 6 or other suitable point.

Executive: Attach a probe at TP 12 and the ground at TP 14 (see figure 3 and 4).



Courtesy Osborne Computer Corp.

2) Read/Write Head Radial Alignment

Radial alignment measures the read/write head's ability to center on an industry standard, precisely written

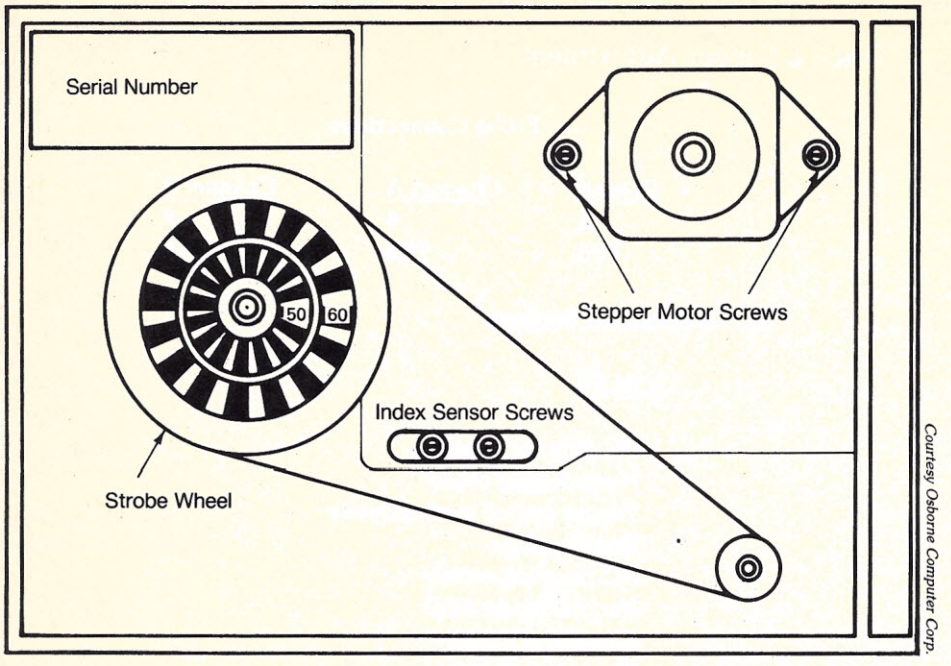


Figure 12. *MPI disk drive, bottom view.*

track. For this test, you need the OCC alignment program, a Dysan 224/2A alignment disk and a scope.

The channel A and B probes are connected to the read signals and the external trigger connects to the drive's index signal (see figure 5). Step the head to track 16 and observe the *cat-eye* pattern. Specifications call for the height, or amplitude of the lobes, to measure within 80 percent of each other (see figures 6A, 6B and 6C).

If lobes differ in height, rotate the stepper motor until the lobes of the cat-eye pattern are equal. Check alignment by stepping away from track 16 and then returning in both directions. For example, step from track 0 to track 16 and from track 39 to track 16. Balance the adjustment so both adjustments fall into specification.

A few situations that indicate disk drive problems: an inability to swap disks back and forth between your drives, disks from other Osborne computers do not work in your Osborne, and read/write errors when accessing just one of the drives.

Adjustments

Siemens, figure 11.
MP1, figure 12.
ALPS, figure 2.

3) Track 0 Limiter Adjustment

Siemens: Step to track 0 and adjust track 0 stop for 0.010 in. Step to track 39 and verify clearance between track 39 stop and frame post (see figure 7).

Alps: Step to track 0 check for 0.003 to 0.007 in. clearance (see figure 3).

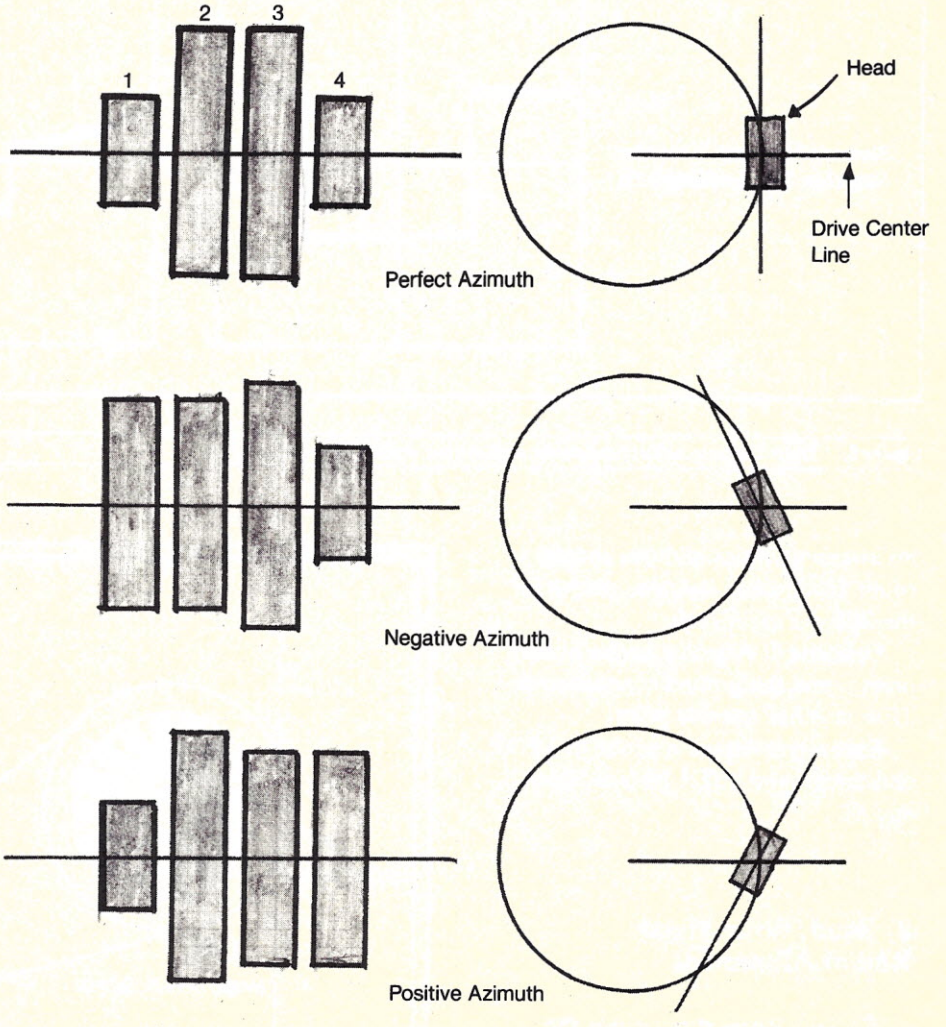


Figure 13. *Azimuth scope patterns. For perfect alignment, lobes 1 and 4 are equal, and lobes 2 and 3 are also equal. Lobes 1 and 4 should not exceed 2 and 3 in amplitude.*

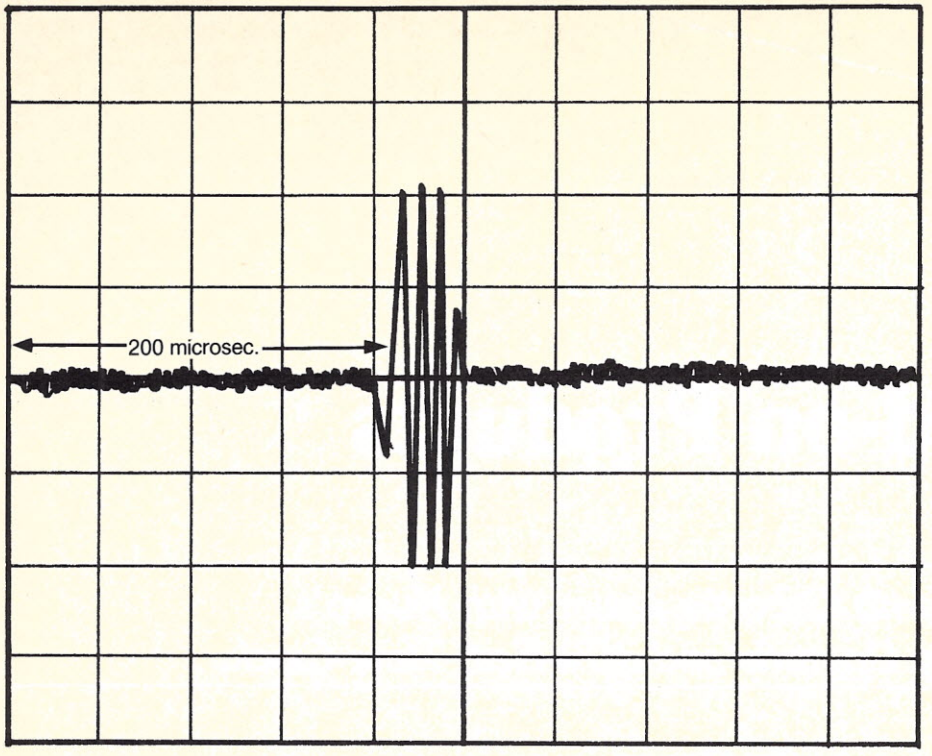


Figure 14A. *ALPS index sensor scope pattern.*

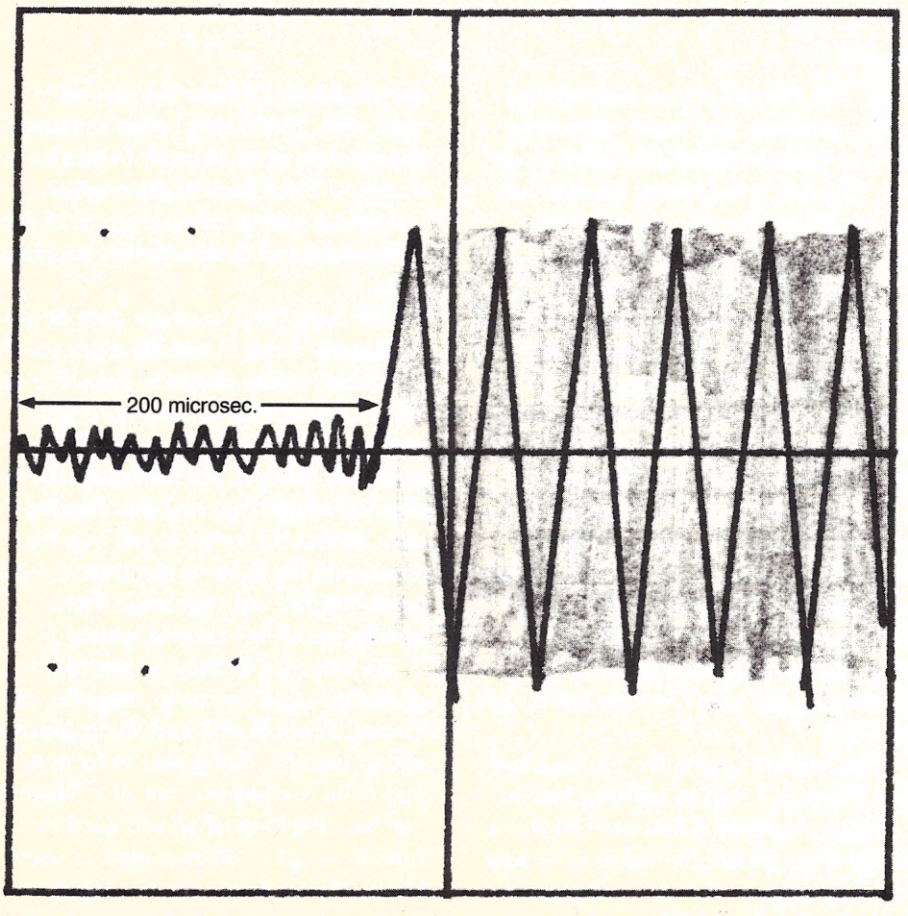


Figure 14B. *Siemens/MPI index sensor scope pattern.*

4) Track 0 Sensor Adjustment

Alternate between tracks 0 and 1 and observe the square-wave signal. Switch oscilloscope to line trigger and alternate between tracks 1 and 2. No signal should display (see figure 8).

Mechanical Adjustments

Siemens, figure 9.
MPI, figure 10.
ALPS, figure 3.

5) Index Sensor Adjustment (Track 1)

Step to track 1 of the Alignment disk and observe the timing between the start of the sweep and the first peak of the timing burst. This should measure 200 microsec, plus or minus 50 microsec. (see figures 14A and 14B).

Adjustments

Siemens, figure 11.
MPI, figure 12.
ALPS, figure 2.

6) Head Azimuth Adjustment (Track 34)

These tests measure degrees of angular rotation. Preset from the drive manufacturer, head azimuth alignment is not user adjustable. Out-of-spec azimuth can occur when a portable computer meets violently with a rigid mass, i.e. concrete pavement.

In any event, some computer repair shops say that poor azimuth (see figure 13) does not affect the quality of head reads or writes; Dysan says it is critical in double-density recording.

Brad Baldwin is a partner at Sheehan/Baldwin/Campeau Communications, a high-technology writing firm in Fremont, California.

o

Review

Add-on Products

Make life with Osborne easier with Nuevo's Double Density Upgrade and JG's Real Time Clock.

Cheryl Peterson

RT-60A Real Time Clock
JG Communications
PO Box 278
3743 South 2850 West
Roy, UT 84067
(801) 731-7329
$79.95 + $5 shipping.

Double Density Upgrade
Nuevo Electronics Corporation
P.O. Box 209
Richmond, TX 77469
(713) 341-6001
$150 + $15 for additional power cable assembly.

Spite
P.O. BOX 8918, Dept. PC3
Portland, OR 97207
(503) 224-0137

This month I review two add-on products that make computing with an Osborne easier and more pleasant. The first is the Nuevo Double Density Upgrade. The second is the JG Communications Real Time Clock.

With two Osbornes around the house, getting the Nuevo double density upgrade caused a momentary panic — which machine should I upgrade, or should I upgrade both? Because I have older tan-case machines, I was hesitant to make any changes to either one. Thinking that some day one may be a collectors item, I decided to upgrade the older of the two and leave the other unmodified. From what I've heard of the sales record for double density boards, mine may soon be the only single density, tan case Osborne left in the world.

The original reason for buying a second Osborne 1 was to use as a backup computer should the first need to visit a repair shop. So far, I've been lucky and had only a minor disk drive alignment problem; but if my first machine goes out of whack, I'll have the second to work with. This means I must use single-density data disks, in order to be able to transport them back to my original Osborne 1 during an emergency. I keep both single- and double-density program disks.

Although I still keep my data on single-density disks, I need the extra space of double density program disks. For instance, my double-density word processing disk has room for a spelling or grammar checker. My communications disk has ample room for downloaded files, so that if I forget to put in a filename with the B: drive identifier, I don't get a disk full error message that knocks me off the remote system.

It's also nice to have access to programs that don't come in single-density format. Fancy Font II and Media Master spring to mind. Being able to format and write to disks in other disk formats can be a big help when you need to send data out to other computer users. Media Master on the double-density machine makes it easy, but it's impossible

with a single-density Osborne 1.

I keep promising myself one day soon I'll use the double-density option to create backups of all my data disks. (Yes, I too am a flagrant violator of the backup, backup and then backup again law.) It will take me about half as many disks to cover all the files.

Nuevo Upgrade

Installing the Nuevo upgrade was about as difficult as I expected, an afternoon project. I had taken my Osborne 1 apart a few times just to see what was inside and to get my husband to adjust the alignment, so I had a pretty good idea of what had to be done. Nuevo's instructions failed to mention removing four screws that connect the power supply to the backplate. Not taking them out makes it impossible to get the thing completely apart without ripping some wires out, so be careful.

Other than that, the Nuevo installation was a snap. The software changes were a bit confusing, but Nuevo takes pains to explain it step-by-step. You have to create a new system disk that understands how to make use of the double-density drives. There is a disk provided by Nuevo that has most of the utility programs you'll need on it. All in all, though, there's nothing that would throw any reasonably intelligent computer user.

Despite the fact that I am not a technical person, I had little trouble getting the upgrade running. I did have to reopen the machine, because I couldn't seem to get it to do anything, but it was only a loose connection at the back of the Osborne 1. Once I repositioned the offending wires and made sure they didn't get knocked out of place when I put the case back together, everything ran fine. I've had no problems with it.

Having had such good luck with the double-density upgrade, I'm now forced to think about Nuevo's other upgrades. I have to admit that the "four by four" upgrade to 1.5 megabytes sure sounds attractive. Maybe when my bank account recovers from the tax man, I can do something about it.

Real-time Clock

Another add-on of interest is the RT-60A Real Time Clock from JG Communications. At $79.95 + $5 for shipping, it's a good deal. I *really* like mine. It plugs into the IEEE-488 port and has an internal battery so it doesn't lose time when your Osborne is off. Besides displaying the time in the upper right hand corner (or wherever else you designate), you can take the information from the clock and place it in your files. Although the clock only displays the time on the screen, it does keep track of the date.

You enter the date by pressing the `@` key and an upper-case `D` and then typing the date. To enter the time, you type the `@` character and an upper-case `T`, followed by the time (as in `01:15:00`).

The time and date format can be set using a special program provided on disk. You can set three different formats. Each disk must have a program called CLOCK on it, but it's only a 5K file. The setup program modifies the clock to present the information in whatever format you select; numbers only, 12 or 24 hour format, two or four numbers for the year, spell out or abbreviate the month, and so on.

The setup program also lets you reset the clock, so you can set it to run local time, reset it to be daylight savings time, or change it to match the time if you're on the road. Since the reset is both hardware and software dependent, it can't happen accidentally. You really have to be trying. In fact, it may take a couple of tries, if you don't have the unit seated in the IEEE port just right.

The setup program has a feature to position the clock display to appear anywhere on the Osborne's screen. By indicating the row and column where you want the time to start, you can have each disk show the display in an unobtrusive screen location. The clock display does not move when you use the arrow keys, so you can move the text hidden behind the clock out to be viewed.

You can also embed a "soft" date or time in a file, so that when you print the file, the system substitutes the current date and/or time. This feature is handy in MailMerge files that you want to carry the actual date they are printed.

You can set up your system to run the CLOCK program when you boot, and then CLOCK will call the program you specify. By setting it up differently for each disk, you turn each disk into an automatic application. Except for the date appearing on your screen, the system will perform as it always has.

Despite the fact that I am not a technical person, I had little trouble getting the Nuevo upgrade running.

There is a special version of CLOCK to run on Osborne 1's with the Drive C: modification. The bugs are being worked out to get it running with various hard disks.

Even though it uses the IEEE port, you can still have your printer there. An extension on the front allows you to connect your printer just as you've always done. There is a slight catch, however. Some printers (like my Mannesmann Talley 160L) must be turned on while connected to the system. For some reason, as long as they are attached to the port, they'll disable the clock if they aren't turned on. With most printers, this is not a particularly annoying situation. With the MT, it is. A high pitched whine from the fan motor makes it impossible to work with the thing turned on. I've never had problems with this, since it is usually printing when it is on and that masks the whine.

A solution is available however, for those of you who have noisy printers or who don't like the idea of leaving your printer turned on all day. If you use a printer switch box and set the switch to an empty port, the clock works fine. In my case, the other port on my DD-1 box is set up for my Epson printer. Epsons do not have to be turned on for the clock to work. When I want to print, I just turn on the MT and then use the switch to put it on-line. Works great!

Another great feature of the RT-60A is its date and time stamp for files. Once

a disk has been initialized using a special program that comes on the disk, anytime you write to a file the date and time of the update are stamped in the directory. The program also puts the initial creation time/date on the file. This function is similar to the time/date stamping found in CP/M Plus (on Osborne Executives).

By using special versions of XDIR that are provided with the disk, the create and update information are displayed as well as the amount of disk space used and remaining. The display also pauses every 24 lines, so you have a chance to view the filenames without the top ones scrolling off the screen first.

Because the size of each directory entry is increased slightly, you are limited to fewer entries. But for most of us, the difference never becomes a problem. You need a lot of 2K files to come close to using all the files available. But just in case, the RT XDIR programs will tell you how many filenames you've used and how many are left.

One version of the XDIR program displays the creation date and last modification date with each filename. This looks fine on an 80-column screen, but for those like me who still use 52 columns, there's another version that displays filenames and the last update time. This information fits comfortably on the 52-column screen and is usually what you want to know, anyway.

If you choose not to initialize all your disks, the RT-60 just ignores the update function on non-initialized disks. When disks are initialized, garbage numbers are written into the date and time information. The first time you access the file this data is overwritten with the current time and date. Initializing all your disks and updating each file could take all afternoon. But if you don't mind the garbage numbers, you can just initialize the disks and then wait for the next time you really need to access the files to do the update.

I tried the clock with the public domain CATALOG program, thinking that since the catalog uses the actual disk directory there might be a conflict. There wasn't — the catalog is unchanged by the clock, and the CAT program works fine with the initialized and updated directories (you won't, however, find date and time stamps in your catalog printout).

This product has been very well thought out. The manufacturers provide good software with the hardware to give you a really useful device. I originally thought "Why do I need a clock in the Osborne 1? The digital clock on my phone works fine." Now that I have it though, I see that it does much more than just give me the time.

JG Communications is a small family-run business and the service was certainly courteous. They accept checks and will ship C.O.D., but do not accept credit cards.

A Note On Spite

It seems that I need to say more about a comment I made in my "Business" column (Jan/Feb 1985 issue, p. 44) concerning Spite Software and the public domain programs they offer on their bonus disk. My comment was not meant to suggest that Spite was doing anything immoral or illegal, although someone pointed out to me that what I said could be misconstrued. So let me clarify.

Spite is offering VDO as a freebie with the full permission and approval of its author, Fritz Schneider. The folks associated with Spite are some of the few software and hardware manufacturers/vendors who have continued to support Osborne users and as such deserve as much business as we can all afford to give them. They do not, as some may have inferred from my comments, repackage public domain software and then sell it at ridiculously high prices. In fact, they abhor the practice and that's one reason they offer their bonus disk for free with most purchases.

I can highly recommend them as a place to buy both software and hardware add-ons. They have probably the largest selection of Osborne third party products under one roof. **O**

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Issues not listed here are sold out. All issues subject to availability.

Letters *continued from p. 24*

once you have joined the CP/M Special Interest Group (SIG), there are many fine CP/M programs which you can download. The best modem program for the Osborne is one called OTERM. Download both the ".COM" and the ".DOC" or documentation files. This may be tricky with the modem program that you have. The easiest way is to find a friend who will give them to you on disk. If you can't find a friend who has them, send a disk to me at the address below, with return postage, and I'll give them to you.

Once you have OTERM and study the documentation you will find how to set it up so that logging onto CompuServe just requires you to push Return to get the next response.

In the conference, you will find interesting, friendly and knowledgeable people, some computer professionals and some amateurs. If you have a problem of any sort, you are apt to find someone with the answer. Or you may be able to help someone else and make a friend.

Of course, CompuServe has many other interesting features outside of the CP/M SIG. One service gives the latest astronomical information. Others give airline schedules and much more. I use their Email service to leave messages for other users. If you leave the message with their membership number, they are automatically alerted to the waiting message when they log on next. If you have a question and can't join us on Wednesday night, you are welcome to ask me by Email. My membership number is 71735,2047.

To avoid cluttering the screen, most of us use "handles". (Shades of radio.) My "handle" is RalphN. Hope to see you on Wednesday.

Ralph Nottingham
1619 SE 3rd Court
Deerfield Beach, FL 33441

Defending Drive C:

From Don Krantz's original review of Drive C: (reprinted in the April/May, 1984, issue of *The Portable Companion*) and his subsequent letter (Jan/Feb, 1985 issue) regarding those critical of his review, one gets the impression both that Drive C: may not be a good value for the "average" user, and that Drive C: engaged in unfair comparison between itself and CO-POWER-88.

I've used a 384K Drive C: in my Osborne for about a year and I'm delighted with it in every respect. Some, but not all of its advantages were first mentioned by Mr. Krantz in his original review of the product. These features include: (1) its ability to handle large WordStar files and large transient files created by other programs such as dBASE II, (2) its faster sorting, (3) and its ability to make WordStar and other disk-intensive software run much faster.

Not mentioned by Mr. Krantz, though, in either his original review or his subsequent letter are the following capabilities: dynamic print buffer, faster PIP times, less wear and tear on floppies, use of Drive C: to replace either A or B drives if these must be removed for servicing, switching between different applications programs almost instantaneously (like having "integrated" software), archiving any huge file from Drive C: to multiple floppies, "automatic" loading of programs or data files to Drive C:, and adapting Drive C: as "cache" memory buffer to Trantor hard disks.

Recent developments include battery backups for Drive C: (protection against losing contents of Drive C: due to power outage), and a new edition of SuperCalc II for creating large spreadsheets. Admittedly, many of these advantages are best realized by those of us who have the 384K version and who are willing to keep Ozzie running most of the time to avoid having to reboot Drive C: (the new battery pack will overcome this objection). Given all the above features that are never mentioned by Mr. Krantz, does he still wish to stand by his recent statement that "Drive C: is not a good buy for the average user"?

As to his objection that Drive C: ads featured a comparison between its product and the CO-POWER-88 board, let me simply point out that in the recent "combined vendor" catalog published by Spite Software (a reputable and reliable firm), Spite itself compares CO-POWER-88, for which it is a dealer, to Drive C:.

I conclude that Mr. Krantz is basing his rejection of Drive C: on largely subjective, not objective, criteria. I know of no other published or private opinion similar to his about Drive C: coming from anyone who owns or has used Drive C: for any length of time.

Bill Schicht
Jackson, MS

Mr. Krantz made many valid points that the editors of this magazine agree with. However, the view that the product is "not a good buy for the average user" is Mr. Krantz opinion which he is entitled to express in his review. Reviews are meant to be subjective as well as "objective" (if anyone can really claim to be objective).

TYPEWRITER Update

Thank you for the review of TYPEWRITER (April/May, 1985 issue of *The Portable Companion*, page 30). The review was very fair, and extremely accurate.

It was only in December that I began to feel the documentation caught up with the rapid changes that occurred in the program in September, October and November, and I sent the review copy in October. I think users will find the documentation better now. Despite being a deceptively quick and simple program to use, the TYPEWRITER source codes are 20 pages long, and with some 16 versions (now) revisions are extremely time consuming. Despite this, it is very possible that over 1000 specific revisions and updates have been made to the source code since I created the program in March of 1984.

As to the mysterious "10" in the Epson FX mode — that was caused by the failure of your printer to recognize the "immediate mode on/off" commands FX printers are supposed to support. I have since learned that the FX 100 does not recognize the immediate

Letters *continued on p. 62*

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74320 SEVRIER, FRANCE
TELE: 50-465026

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67, AV. DU MARECHAL JOFFRE
92000 NANTERRE, FRANCE
TELE: 33-72556-77

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OSBORNE COMPUTER CORP GMBH
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8000 MUENCHEN
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GETS BUSINESS SYSTEMS, INC.
P.O. BOX 8717
FORMUNING, GUAM 96911
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SIRIUS SYSTEMS LTD›
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EDMONTON, AUCKLAND 8
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OSBORNE COMPUTER DIVISION
P.O. BOX 31982
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TELEX: MADRIC 448-0163

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P.O. BOX 17107
S-10462 STOCKHOLM, SWEDEN
TELE: 46-8-690135

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CH-8702 ZOLLIKON, Switzerland
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C/O LARSU GRAPHICS LTD
104 E. 40TH ST.
NEW YORK, NY 10016
TELE: (212) 697-1045

Review

Turbo Tutor

Not for complete beginners, and not completely descriptive of deviations from the standard, but useful for learning Turbo Pascal.

Dorothy Hays

Turbo Pascal
Turbo Tutor
Borland International
4113 Scotts Valley Drive
Scotts Valley, CA 95066
(800) 255-8008
(800) 742-1133 (CA)

An excellent book for learning Turbo Pascal is a book from Borland International (creators of Turbo) called *Turbo Tutor.* It is best used in conjunction with Borland's Turbo reference manual, where there are concise explanations in more detail than in the *Tutor.* The *Tutor* is ideal for those who already know Standard Pascal, or know another computer language.

A beginner should start with one of the many introductions to Pascal available in bookstores, but not with *Turbo Tutor. Turbo Tutor* covers all the information a user needs, but not in enough detail for someone unaccustomed to programming.

For instance, there is no mention of the fact that a semicolon (;), while necessary between most structures, will cut off any `else` statement in an `if-then-else` sequence and a vague error message will be given.

Also the examples tend to use words which have not yet been discussed, and this can be a bit confusing. *Turbo Tutor* shares with the Turbo manual an incompleteness in the section on the differences between Turbo Pascal and Standard Pascal; for instance, there is no mention of the fact that `Get` and `Put` (used with Turbo files) are not allowed in Standard Pascal, or that the use of `Assign` is not standard.

Turbo Tutor has some very strong points. It gives all the various predefined functions. There is a detailed explanation of how to comment your program.

An advantage of Turbo Pascal over Standard Pascal is the `else` option in case structures, which allows error-checking when offering a menu, and this is explained quite well; the other control structures (for iteration) are also presented completely.

Another advantage of Turbo is the way files can be called using `Assign` without renaming the file on your disk, and this is explained more completely than in the manual. One other good point about *Turbo Tutor* is that it gives explanations of the non-printing ASCII characters, such as the bell.

The writers at Borland begin the book with an amusing beginner's section, clearly marked so the experienced user can skip it. For the nervous beginner there is humor and simplicity in approach. They discuss how to develop problems before writing code, which most computer books skip even though it has been shown to be quite useful in learning programming. The book then

shows how to compile a program, search for errors, and run it.

Turbo Tutor explains well some of the parts of Turbo Pascal which are different from Standard Pascal. One of the major differences is string handling. The *Tutor* explains the various procedures (`length`, `concat`, `readln`, `writeln`, `copy`, and `delete`). With Turbo Pascal your program can `readln` or `writeln` and entire string, or copy or delete part of the string. These are all functions you would have to write yourself in Standard Pascal, and beginners using another text on Pascal should read this chapter before attempting to use strings, unless they chose to use the (*$B-*) command to turn off the editor buffer. Incidentally, this command is needed for using Turbo with programs written for Standard Pascal as when taking a course in it, and it is not discussed in the *Tutor.*

Turbo Tutor also explained other non-standard features of Turbo Pascal such as deallocating memory, `get` and `put` for files or `pack` and `unpack` for arrays. There is a complete discussion of why Turbo does not use `pack`, `unpack` and `packed`. The book tells how to chain programs together to make a larger program, although you'll have to experiment with it to make it work for you — set up a main program which is a case statement (menu) which calls the sub-programs.

`Get` and `put` are not used for record files because the CP/M version of Turbo Pascal does not use file "windows". Instead, your program simply `reads` and `writes`, as for text files. `Assign` is used to connect the file variable to its name on the disk, allowing one to alter the program easily to perform the same functions on other files. `Close` makes sure that all the material has been written to the file.

`FileSize` is very useful, since on a CP/M computer there is limited heap space, which is needed especially for pointers. Random access to record files is an important addition to Pascal and it is discussed in detail. `Seek` is the command used, where the record count starts at 0. Another addition to Pascal is untyped files, which are read or written in blocks of 128 bytes. A minor point, but one which will prevent your program from compiling, is that one cannot use `file of char`; `text` is mandatory in this case.

There is a problem with lateness and incompleteness of information. The `eoln` command, used when reading data in with a loop, is not given until the 18th chapter. The examples use information which has not yet been given, such as reading from the keyboard, as in giving `Read (Kbd, Ch)`, without explaining the I/O used. Borland explains `readln` and `write`, and the difference between `writeln` and `write` (`writeln` does a carriage return), but does not say that to read and then do a carriage return one needs `readln`, and that if you do not want a carriage return you use `read`. The details about `read` are given in the manual.

Turbo Tutor covers all the information a user needs, but not in enough detail for someone unaccustomed to programming.

Another thing someone new to Pascal might want to know is how to right-justify output, and that is not given until late in Chapter 18. The incompleteness problem is partially because Borland teaches by example rather than spelling out all relevant information. The material is not presented in such a manner that one can begin programming immediately; there is information that a novice would need early on which is not given until late in the book.

Turbo Tutor is quite complete on some parts of Pascal. Variant records are generally skipped in Pascal courses, but here they are justified and described in detail, using StarTrek as the case study. `Shl`, `shr`, and the `byte` type aren't useful to everyone, but they are interesting and the descriptions of them add to one's appreciation of what the computer does. The rule of not using what has not yet been declared is given, as are the exceptions. The importance of semicolons as statement separators is stated, and two pages are devoted to how to comment your comments, more useful than it sounds because it allows marking off commented sections to test your program. Typed constants, not present in Standard Pascal, are described, and there is a description of the need for the various structures, such as arrays and records. Here you will learn that the underscore character (_) is allowed in Turbo Pascal, useful for making identifiers more readable on implementations such as the Osborne for which the directory is in all upper case letters.

The section on pointers is good as an introduction; interested readers are referred to another book. Borland justifies the need and use of pointers, and shows how to set up a linked list and find an item in it.

Turbo Tutor tells about some useful commands not found in Standard Pascal. `ClrScr` clears the screen. `UpCase` is used before error-checking to convert all input into upper case letters; this is of concern to Osborne users because data is read in both upper case and lower case even though keywords can be small or capital. `MaxAvail` tells how big the largest block of memory available is. `KeyPressed` is great for simulating real-time programs, as when writing a game. To have your program ring a bell when there is no input, type `Write (Chr (7))`.

Osborne users should know to type `ConOutPtr := LstOutPtr` to get output sent to the printer; I did not find this information in either the manual or the *Tutor.*

The *Tutor* does not have an index, but it has a very complete table of contents. The main problem with the *Tutor* is just that to really use it well you have to read the whole thing before doing any detailed programming, and the solution would seem to be to read the whole book, then refer to the parts which apply to what you are doing.

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Letters *continued from p. 56*

mode on/off commands the FX 80 is supposed to recognize. The FX 100 also does not recognize reverse linefeeds, which are implemented on the up-arrow of the FX version. I have eliminated the FX 80 immediate mode on/off command from my FX version to avoid this problem.

As to the Mannesman Tally version, I would guess it shares a problem I discovered with some versions of the Prowriter — it doesn't do a linefeed on a line with a buffer full unless a carriage return is performed first to clear the buffer.

I have solved that problem by changing the source code to put a carriage return first, and then a linefeed (or linefeeds for multiple line spacing) second, so the procedure you described of typing a Return is now unnecessary. I should note that since I own a daisy wheel printer, on which the program is virtually debugged (a Diablo 630), it has been harder to debug the dot matrix versions, for which I have had to rely upon friends who helped me from the start, and purchasers since. We keep trying, and I think it's gotten quite good! Thank you again for an excellent review.

Don Slaughter, Chief Programmer
MicroCost
Seattle, WA

Irresponsible Manufacturers?

The manufacturers of software make end users swear terrible oaths regarding the sanctity of the programs, but what protection is available from the computer-related companies that do business by mail and take the money of the user as surely as in an armed robbery?

For example, I sent a letter to the United States Attorney today requesting assistance in obtaining the 2.4 upgrade to dBASE II because I have yet to receive the upgrade, for which I paid Ashton-Tate in advance. I have had to contact states' Attorneys General regarding the infamous HomeTax package by Learning Shack, and I have been in recent correspondence with the New York State Department of Law regarding a magazine which mysteriously lost my subscription when I indicated to them that I did not wish to renew my subscription in advance.

I have been slightly mollified (otherwise I'd mention the name) by a program from a software distributor which advertises in this magazine, who sold me a package that was to include a tutorial disk; that package was delivered in December, but I have yet to receive the tutorial disk even though such has been promised on several occasions.

And of course there is the painful memory of Osborne Computer Corporation itself, along with the lost subscription to the original *Portable Companion* and the p-Systems I'll probably never see even though OCC is now out of bankruptcy. However, I'm still getting mailings from the attorneys as a result of my letter to the Bankruptcy Court.

But write to any computer magazine about end user agreements or programs that can overcome copy protection and then wait for outraged responses from the manufacturers! They are certainly right when they say pirated copies of their programs cost them money, but those are the same companies that are likely to deal unfairly with their customers.

If the end user is supposed to deal fairly with the manufacturer, why not the other way around?

Bernard E. Jensen
Bothell, WA

ANYCODE on Executive?

Is ANYCODE another of those programs that does not work on the Executive? Doug Hurst's explanation in the Jan/Feb edition of *The Portable Companion* (#15) looked easy enough, but it will not install on my Executive.

After typing the program and editing out my typing errors I used SID (the Executive's version of DDT) just the way it is shown on page 36 for our 3.30 version WordStar program. The MORPAT area was clear when I began. The problem is, it was still clear when I finished. SID did not give any error messages.

As an experiment, I also tried using MLOAD from our local FOG library. It has worked on other patching combinations, but produced the same results as SID in this case.

Do you have any ideas on how to get ANYCODE to work on an Executive?

Chuck Stapleman
Glendale, WI

Flag Program

I wish to thank you for publishing my comments on the Flag (*The Portable Companion*, July 1984). As is evident, the flag isn't quite correct. The fifth short stripe should be a long one and extend under the stars, but it is a close likeness. Here are the changes:

Line 10 deleted.

Line 20 through 90 were changed to a single line as follows:

```
A=61709:B=61767:C=61707 .
```

Line 180 change E to C.

Line 260 deleted.

Line 270 change to `Goto 470`.

Lines 290, 350, 430 change `E` to `C`.

Line 470 change to `Lprint Chr$(15)`.

Line 490 and 560 change `I` to `A`, `J` to `B`.

Line 520 change to `If Z=22 Then Z$=Chr$(233)`.

Add Line 585: `Lprint Chr$(18)`

This will print the flag out to an Epson MX-80 in the condensed mode.

Dick Worth
Redwood City, CA

SPRINT Corrections

I'm writing to list some corrections to my article "Enhance WordStar's Print Facility with SPRINT" (March/April 1985 of *The Portable Companion*) which may be causing problems for some of your readers.

1. Page 59, left column near bottom of figure 5. The equates for top for form (`tof`), `expand`, `comp`, `emph` and `ital` should not have the word EPSON "wrapped" around down to the next line. The word EPSON is, in each case, part of the comment on the previous line. For ex-

ample, top of form EPSON should be on one line.

2. Page 59, right column near top of figure 5. In the XXXXh-base, XXXX should be 7321, 7849 or 846D depending on your version of WordStar. See PBGMEM label in table 1 on page 56.

3. Page 59, right column near bottom of figure 5. The following is correct:

```
errori: equ $+destin
```

A couple of readers have interpreted this as error1 since the dot on the lower case "i" did not print clearly. There is a significant difference between errori on that line and the actual error1 string on the very next line.

4. Page 61, left column near middle of figure 5. I added the comment !!!! VARY THIS TO VARY DELAY !!!! for emphasis after reading in the program listing with the ^KR command. It was a mistake. I didn't think the assembler would object to the !!!!'s since they came after a ;. It did. With the DRI assembler, ! may be used to batch commands on the same line. For example:

```
push h !push d !push b is the same as
push h
push d
push b
```

But in this case, the assembler even tried to deal with the !'s in the comments.

5. I have also had some readers say that their addresses for their versions of WordStar differ from those listed. I have the complete manual for the 3.0 version I received with my Zorba and feel certain the addresses listed for this version are correct. I have relied on owners of other versions and actual installations for friends for the addresses of 2.26 and 3.3.

I apologize for any inconvenience caused by these errors and typos. Let me know of any more problems by writing to me care of this magazine. SPRINT is an especially good, useful program (how's that for a pat on the back), and I want to share it and see it improved by someone with the WordStar customization notes.

Doug Hurst
San Francisco, CA

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New MATHSTAR, Mastercom, and More

Print Station and Sheet Feeder

Ziyad announced the introduction of two new products in the PaperJet series: the PaperJet 2000 "printstation" and the PaperJet 400 sheet feeder.

The PaperJet 400 is an automatic sheet and envelope feeder for the Hewlett-Packard LaserJet printer which more than triples the paper capacity of the H-P laser printer. It consists of two paper trays and an envelope tray which are housed under the LaserJet. It allows the user to print up to 450 sheets of paper and 75 envelopes without refilling the trays. The 400's trays adjust to fit legal, standard, executive or European DIN sized paper.

The LaserJet and PaperJet 400 combination offers a total of three paper trays, allowing storage of three types of stationery and interspersing within one document of different sizes and types of paper for correspondence, graphs and spreadsheets. The PaperJet 400 is compatible with Hewlett-Packard, IBM, and IBM-compatible computers and word processing systems that use the LaserJet printer.

The PaperJet 2000 printstation combines into one unit a 47 cps daisy wheel printer, two paper trays, an envelope tray, and an acoustical sound hood. It requires only one-third the office space required by the individual components. The 2000 is also one of the first daisy wheel printers to achieve 53 dBA sound levels. It offers automatic paper and envelope handling, taking up to 175 sheets of paper ranging in size from 7.25 inches wide by 10.5 inches long to 12.0 inches wide and 14.0 inches long.

In addition, the Ziyad PaperJet 2000 offers an exclusive feature, Name and Address Capture, which memorizes the inside name and address from a letter as it is printed and automatically positions the address on the accompanying envelope. A manual feed chute lets you bypass the paper feeder for odd-sized printing requirements; because of a top-of-form optical sensor, the operator can insert the paper anywhere in the chute and obtain consistent left and top margins.

Many of the hardware switches which must be changed manually on other printers can be controlled from the screen for the PaperJet 2000. Some of these soft switches are ribbon advance, hammer intensity, communications protocol, line spacing/inch, and character pitch. The 2000 also recognizes commands to change paper sizes, which makes it possible to change paper sizes and paper types within a document.

The PaperJet 2000 interfaces with RS-232C serial, Centronics parallel, IBM 8-bit parallel and 13-bit parallel hosts using existing printer drives, so can be used with any Osborne.

The PaperJet 2000 is $4495; the PaperJet 400 is $1895. For more information, contact:

Ziyad, Inc.
100 Ford Road
Denville, NJ 07834
(201) 627-7600

MATHSTAR Available

A new version of MATHSTAR is now available for CP/M computers using WordStar 3.3 (MATHSTAR version 3.043E) and CP/M computers using WordStar 2.26 or 3.0 (MATHSTAR version 3.043D). MATHSTAR is a program which works as if it were a built-in feature of your word processor. While editing a document, you may enter arithmetic equations including add, subtract, multiply and divide functions in your document and then have the result of the equation calculated and inserted properly in the document automatically. The program is especially useful for producing business plan assumptions, invoices and other non-spreadsheet type documents.

Owners of MATHSTAR may obtain an update to the current version by returning their original MATHSTAR disk with $15. Credit cards are not accepted. MATHSTAR costs $75 (includes shipping) in the U.S., and 25% more for foreign orders.

For more information contact:

Woodford Associates
1939 Belmont Ridge Ct.
Reston, VA 22091
(703) 620-5480

Software for Indexes

ALLM Books announce INDEX-AID, two programs which assist in the compilation of an index to anything which requires a "back of book" index. The first program enables you to add index terms and reference numbers, such as page or item numbers, to sort terms and to eliminate duplicate terms. It will also store the index on disk and print it out for checking. Facilities for changing entries are also provided.

The second program prints the completed index. It gives the user extensive control over the layout of the finished

product. Options allow the user to choose 2 or 3 column format, the column width and length, the spacing between letters of the alphabet, indentation of second lines, the number of spaces between the index terms and reference numbers and the typeface (normal or condensed) in which the index will be printed. INDEX-AID is available for the Osborne 1, as well as for IBM PC disks or as combined user manual/program listings.

For further information, contact:

ALLM Books
21 Beechcroft Road
Bushey, Herts WD2 2JU
ENGLAND

Black Box Catalog Available

The January 1985 Black Box Catalog is being distributed free. It contains many new products such as the Tone Activated Talking Switch (TATS™), which is explained in detail. The TATS, only available through Black Box, allows remote switching between computer modems and telco lines — a voice response tells you what channel you've selected. Other new products featured in the catalog include modems, line drivers and multiplexors, gateway products and some hard-to-find items only found in the Black Box Catalog.

The Catalog also contains a technical reference section that explains asynchronous data transmission, binary encoding, cable fabrication techniques and a glossary of computer terms. The Black Box Catalog, published twice a year, is available free.

For more information, contact:

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ADVERTISER INDEX

Feature

Jake Metcalf

Supplemental world navigation is one of the many functions an Osborne Vixen performs in the cockpit of the airborne Mobile Research and Diagnostic Center.

In the Field: Global Concerns in Micronesia

Osborne computers on islands in the Pacific help provide medical care and conduct medical and scientific research.

Tony Bove & Cheryl Rhodes
Photos by Jake Metcalf and Peter Tippett

Many years have passed since the U.S. and other countries stopped testing nuclear devices in the middle of the Pacific Ocean. The people of Ailingalapalap, a tiny atoll in the Micronesian Pacific, still throw a party whenever a visitor steps ashore, but now the airplanes bring a technology that saves rather than destroys.

In 1983 a team of Pacific Foundation physicians and scientists, headed by Peter S. Tippett, Ph.D., M.D., conducted an extensive study of health care in the Marshall Islands and the epidemiological aspects of several prominent diseases. The team brought medical and geological research equipment, including an Osborne 1 computer.

They found a number of diseases that are rare in our society, including a

Peter Tippett

The aircraft lands on a small island in the Marshall Islands in the Pacific. An Osborne 1 is in one of the boxes.

form of diabetes that affects 20% of the population of these islands (on some islands, up to 40%). They also studied a disease called filariasis, which can cause elephantiasis of the legs.

Virtually all of these islands are remote and nearly inaccessible. Most of the islands have only about 300 people on each island, with no electricity, no fresh water, and no health care facilities of any kind. The need for a mobile medical facility was obvious, and with the unique medical problems facing these people, the Pacific Foundation scientists realized they had an opportunity to conduct extensive research. The combination of a relatively immobile population, good control over the medical delivery and care systems, and the availability of excellent isolated control populations would make the studies more valid.

The project is conducted by The Pacific Foundation for the Advancement of Science and Medicine, which is a nonprofit organization founded in 1983 to support research in the Pacific. Its primary purpose is to perform basic and applied research, but it is also developing appropriate local technologies such as solar power facilities for the islands, and providing basic health care as well as sophisticated medical diagnostic facilities.

Dr. Tippett, Director of the Pacific Foundation, and colleagues intend to return to Micronesia in their newly refurbished Britten-Norman Islander, a mid-sized twin engine land plane to be used as an airborne Mobile Research and Diagnostic Center. The Osborne Vixen computer in the photo is used to aid navigation on the plane, and it will join the other Osborne 1 and Executive computers already in the Pacific gathering medical epidemiologic data.

If you want to get anywhere in the Marshall Islands, it takes about two weeks to get to the island you want to get to, and two weeks to get back. People on the islands who get sick have to go as far as Hawaii to get to a hospital. The Pacific Foundation brings the basic diagnostic facilities to the islands so that people don't have to go so far just for a diagnosis.

The Vixen saves nearly an hour's calculation to translate celestial sextant fixes into geographic coordinates. In an aircraft, an hour of calculation time may mean wandering two or three hundred miles further off course!

"We started as a group of physicians and scientists who either had done or wanted to do research in the Pacific," explained Dr. Tippett. "There are curious diseases in the Pacific that are not found in America. For example, there is a particular form of diabetes

Peter Tippett

Children on the island of Ailingalapalap, a tiny atoll in Micronesia.

People on the islands who get sick have to go as far as Hawaii to get to a hospital. The Pacific Foundation brings the basic diagnostic facilities to the islands so that people don't have to go so far just for a diagnosis.

that occurs on some islands as high as 40% of the population, but those who suffer from it do not die as quickly as many diabetics do, and they don't have the same devastating side effects. By studying this disease in the Pacific we might be able to determine the differences between this and other forms of diabetes, and thereby learn more about the disease."

The group has also been studying a disease called filariasis. "Filariasis is a parasite that your body fights in the same way your body fights cancer. The parasites run around your body for your whole life — they don't kill you but you're not able to get rid of them. We think that by studying how the body fights filariasis, we may gain some insight into how we can fight cancer. The particular need for blood samples is for people afflicted with *nocturnal filariasis* — in which the parasites enter the body only at night. This kind of disease only occurs in that part of the world."

For the island communities, the airborne Mobile Research and Diagnostic Center and Laboratory (essentially a fully-equipped airplane) provides many of the benefits of a major hospital and university. The plane has a medical clinic with diagnostic equipment, and a chemical and microbiological laboratory. It can easily handle blood samples and transport them to mainland hospitals.

The plane also has on board a basic science and bio-science laboratory with centrifuges, refrigeration, ultracold sample freezers and computers. The plane carries water purification and solar/wind power generation equipment for use in the islands. The facility is staffed with volunteer scientists, physicians and educators from universities and institutions throughout the world.

The Pacific Foundation provides the 'university' for independent researchers. When someone wants to do research in the Pacific, they use the Pacific Foundation as the institution to oversee the implementation of the research. This relationship is just like a university providing a laboratory for a scientist who gets a grant from the National Institute of Health.

"As soon as we came into being," says Dr. Tippett, "countries in the Pacific contacted us about projects they wanted to do." Micronesian officials asked the Foundation to study diabetes on the islands and provide sophisticated medical care. These countries usually provide the funding.

Oceanographers at the University of Hawaii are using the Pacific Foundation facilities to work on aquaculture projects to help solve the food supply problem. Most of the islands in Micronesia are so small — sometimes only as wide as 100 ft. and less than a mile long — that there's hardly any dirt on them. The natives can't support themselves by growing things, so they exist on a sparse diet of fish and coconuts.

Aquaculture projects involve growing food underwater, in lagoons and in some of the atolls in the Pacific. An atoll is a group of islands in a circle with shallow water in the middle. An atoll might be fifty miles across or as big as one of the Great Lakes, with encircling islands that are only a hundred feet wide.

In addition, a geological project is starting up, using military aircraft formerly used as submarine hunters — large planes equipped with radar. The geological team wants to equip such an aircraft with geological instruments and fly 4000 miles in one direction gathering geological data.

The Department of Interior just awarded a contract to people who are working with the Pacific Foundation to provide medical care for the Marshall Islands. The Foundation will provide the medical backup equipment, and eventually X-ray machines, on another aircraft that will carry physicians and medical teams from island to island.

This project will provide medical care, health training, public health edu-

cation, and new dispensaries for approximately 3500 people on six outer atolls in the Marshall Islands who were affected or displaced by the U.S. nuclear weapons testing of the 1950's.

From a scientific viewpoint this project provides an ideal setting for medical research because it gives access to several independent yet related communities that are geographically isolated from each other. Scientists can focus on critical questions regarding certain diseases that are prevalent there, and which are otherwise difficult to study. The study of these disorders would not only answer some important local health care questions but would provide significant insight into the diseases suffered throughout the world.

Osborne computers are out in remote areas of the Pacific handling data gathering and administration chores. Tippett's first Osborne 1 was used for medical research on the island of Ailingalapalap, in Majuro (the capital of the Marshall Islands), and in the Society Islands in the South Pacific.

In his 1983 trip, Dr. Tippett powered the Osborne 1 using a generator donated by Sears. "This setup worked very well. The O-1 has had no glitches from working with generators. Of the seven Osbornes we have, not one has needed repairs."

Now most of the islands have some form of solar power for charging batteries, and they use battery packs for the Osborne 1, Executive, and Vixen. The solar facilities usually consist of one solar panel that charges a couple of car batteries.

"The salt spray is bad for computers," Dr. Tippett admitted. "The atoll islands are only about a hundred feet wide, maybe a mile or two miles long. You can see the ocean on one side, the lagoon on the other. Everything inbetween is affected by salt spray. It affects the contacts on the keys in the keyboard, and the edge connectors. When we plug in a peripheral, we have to shine-up the connectors using pencil erasers, which work wonderfully on gold connectors."

Dr. Tippett and his crew do no printing on the Pacific Islands or in the aircraft — only on land at the administration offices. "We don't carry much. We enter the data we need on disk, and our disks have never been hurt by the salt spray. We don't print it — we don't use paper if we don't have to, because it would be too heavy to carry."

They use dBASE II to enter data on disease studies, and Quickcode (Fox & Geller) to set up a data entry screen. The data includes personal health statistics on individuals who have the disease.

The medical records are stored in dBASE format for easy sorting and analysis at a later date. The computers are also used for scientific data analysis — they will be used for several aquaculture and ocean geography projects in the next year for both data storage and complex regression analysis.

If you want to get anywhere in the Marshall Islands, it takes about two weeks to get to the island you want to get to, and two weeks to get back.

There are no telephones on most of the islands, so they don't have any use for modems. On the major islands that have telephones, communications are often so terrible that it's hard to simply talk over them. They doubt that modems would be effective out in the Pacific, although they are watching the ham radio packet switching technology, since there are so many ham radios.

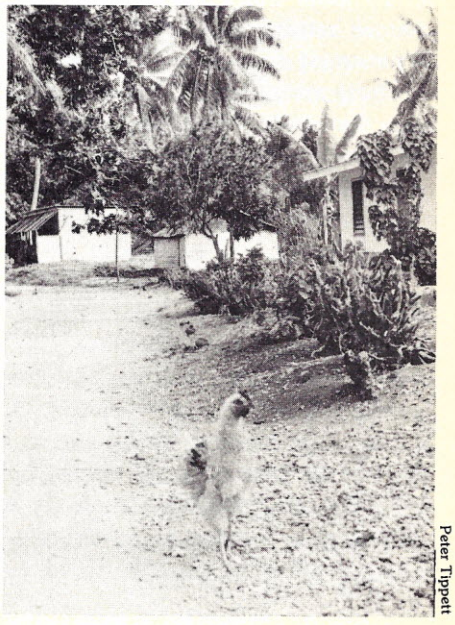
The Foundation received an Osborne Vixen recently and placed it in the cockpit of their flying laboratory/clinic. Although aircraft carries both sophisticated world navigation equipment (VLF Omega) and local navigation equipment, it would be foolhardy to travel over thousands of miles of open Pacific ocean with only one source of navigational information.

The Vixen saves carrying over twenty five pounds of reference charts and tables used in celestial navigation. The Vixen also saves nearly an hour's calculation to translate celestial sextant fixes into geographic coordinates. Hours may be available aboard a boat at sea, but in an aircraft, an hour of calculation time may mean wandering two or three hundred miles further off course!

They use a highly modified public domain BASIC program written by Frederic N. Rounds called SUNFIX to automatically account for the aircraft altitude, sextant error, refraction errors, sun-semidiameter, aircraft speed, track, date, time, future bearings, position estimates, and estimated time to go; as well as to make the global position calculation from sextant data. They can get a position fix in less than a minute using the Vixen, rather than performing hour-long manual calculations.

They did extensive testing to make sure the Vixen did not interfere with any of the sophisticated aircraft power supply, communications, navigation, transponder, radar, and weather detection equipment. A battery pack offers a continuous reserve in the air and packs are recharged in flight from the aircraft generators.

How did Peter Tippett get the bat-



Peter Tippett

tery pack to work where others have failed? "Yes, contrary to what you may have read, both the Vixen and the Executive will run on the battery pack designed for the Osborne 1. The only trick is to set the input voltage switch on the power line input of the Vixen or Executive to 220 volts instead of 115. The inverter used for the Osborne 1 apparently is a constant current type and is current-limited. This allows the voltage to vary depending upon the current being drawn. Since the Vixen and Executive draw about twice the power as the Osborne 1 (because of the bigger screen and fan), they also draw about twice the current at 110 volts as at 220 volts. Therefore if the input is set to 220 volts, the current doesn't reach the limiting value for the inverter and the computers work fine.

"I'm not sure Osborne Computer Corporation would approve this method of operation but in my experience the Osbornes have all been very tolerant of a wide range of input voltage as well as fluctuation and variation from a standard sine waveform.

"Of course all this comes with some penalty. The battery pack and inverter are in fact delivering about twice the power when driving the Vixen and Executive computers as when driving the Osborne 1, and the battery doesn't last as long under continuous usage. In our tests with the Vixen, the standard fully charged battery pack lasted an average of something over an hour (the worst was forty minutes and the longest was more than an hour and forty minutes). The inverter gets notably warm, but neither the inverter, battery pack nor computer has failed in quite extensive use for The Pacific Foundation.

"Our Vixen is used more than half of the time in an airplane where because of continuous charging, the battery life is not important. We save our work frequently and carry a spare battery pack in case the first fails at a critical time. The inverter gives plenty of warning before the battery pack fails completely. A warning tone sounds at every disk drive operation when the battery reserve becomes low. When the warning tone sounds without the disk drives operating, it is time to quit. There is still enough juice left for a save and exit from any given program operating at the time. When the battery finally dies, the drive stops dead, the screen develops a psychedelic display and then goes blank. Whatever isn't saved by then is gone."

You can tell that Dr. Tippett likes his Osbornes. "We love the Vixen. It runs faster than an Executive, even faster than an Executive with 'Drive C:'! [Drive C: is from Westwind.] The screen functions are faster, and within WordStar, processing is faster except when it has to go back to disk (then, of course, 'Drive C:' is faster). There are seven Osbornes with the Foundation — the only computers we have."

The Pacific Foundation likes Osbornes so much that they use one in the office for fund raising efforts. They also like hacking on an Osborne, and so they developed a program called PUNT for managing mailing lists and form letters.

The secretary of the Foundation uses an Osborne 1 to write, edit, print and mail pleas for donations and thank-you letters to donors. PUNT was written using MailMerge "dot" commands and conditional expressions (version 3.3) so that it could provide data access operations from within WordStar.

PUNT is available for commercial use — it is given away with a donation of $48 or more. The donations are tax deductible and are used to fund Pacific Foundation projects.

PUNT formats printed letters so that the letter is centered on the page with appropriate margins. It prints mailing labels and envelopes. You can print form letters from within WordStar using a MailMerge data base without having to learn "dot" commands or use another program like dBASE II. In addition, you can use dBASE II and still be able to transfer the data to a MailMerge format without any problems.

"We write to government officials a lot," explains Dr. Tippett, "so we designed PUNT to handle very long addresses. PUNT will handle almost any type of address and keep the address record in a mailing list for you. You could write to the 'Duke of Fiji, Palace Theatre, Director of Business and Finance, Chairman of Health Dept. and Education,' along with a horrendously-long address, and PUNT keeps the records stored appropriately so that you can still sort the mailing list."

One project will provide medical care, health training, public health education, and new dispensaries for people in the Marshall Islands who were affected or displaced by the U.S. nuclear weapons testing of the 1950's.

The PUNT program accepts up to 30 separate data fields for each name and address record. It uses 20 for address functions alone. It can assign any field name to any of those 20 address slots — you can redefine it to have your own field names. You can also add fields if you want, to keep certain data along with the name and address to use in form letters.

For example, they keep the "item donated" as a field with each donor. When Volkswagen donated a car, they sent a "thank-you" form letter that included a reference to the item, as in "Thanks for the donation of *the 1983 Volkswagen*"; PUNT automatically inserted the donated item, and the letter came out on the printer properly justified and formatted with the words properly inserted.

PUNT centers the letter on the printed page according to its length; it is not merely started at the top. If the letter is short, it is started further down; if long, it is started further up. This is controlled using MailMerge dot commands in the PUNT command files using conditional expressions. It will even force a

Peter Tippett

The tiny atoll of Ailingalapalap in the Marshall Islands, part of the trust territories of the U.S.

long letter onto one page by making the character width narrower and making the line height shorter.

PUNT is designed for processing mail lists, not research. PUNT will sort a 1000-name mail list into alphabetical order in about a minute; it will sort and edit at the same time. You can ask to see, for example, all the names of people living in San Francisco, then write a letter to all of them, even including a personal message in one or two of them that the others don't get.

Since everything is written in MailMerge dot commands, you can modify PUNT to your specific needs if you know the MailMerge commands. The PUNT mailing list can be converted to dBASE II, and dBASE II files can be converted to the MailMerge format for use with PUNT. Since the PUNT mailing list is in MailMerge format, the fields can be any length. You can type a sixty character answer for a zip code if you want.

PUNT was developed entirely on the Executive, and "beta-tested" by the Pacific Foundation's secretary. It consists entirely of MailMerge command files. PUNT may be an excellent product for small non-profit organizations or small businesses that are sending out form letters using a mailing list. It maintains a mail list automatically. *(Ed. Note — we are reviewing PUNT in a future issue.)*

According to Dr. Tippett, PUNT works on any computer that runs WordStar. "We demonstrate PUNT on a Compaq as well as a Vixen, but the Vixen is so much faster that my staff prefers it over the Compaq."

The people of Micronesia will immediately benefit from the works of the Pacific Foundation, and the rest of the world will benefit from its medical and scientific research. Physicians will provide medical care and scientists will conduct epidemiological research for this population for the next four years, during which time they should be able to conduct extensive studies of diseases that will produce a wealth of reliable data, to be used in future medical research.

So there is good reason for the islanders of Ailingalapalap to throw a party when the Mobile Research and Diagnostic aircraft arrives. They don't get many visitors, and when they do it's a big event. At a party on one of the islands, the natives fashioned a box-like sculpture out of coconuts that was supposed to represent the Osborne 1 computer. From a lonely outpost in the middle of the vast Pacific Ocean, an Osborne may indeed seem like a gift from the supernatural.

o

This article is derived from an interview with Peter S. Tippett, M.D., Ph.D., Director of the The Pacific Foundation for the Advancement for Science & Medicine. To contribute to the Foundation, or to obtain a copy of PUNT for a $48 donation, or to correspond with them, write to:

Peter S. Tippett, Director
The Pacific Foundation
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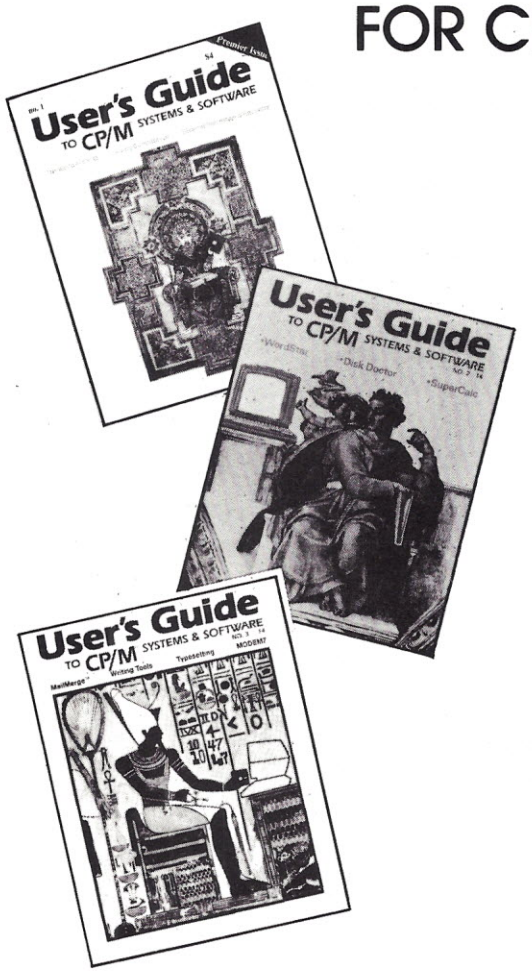

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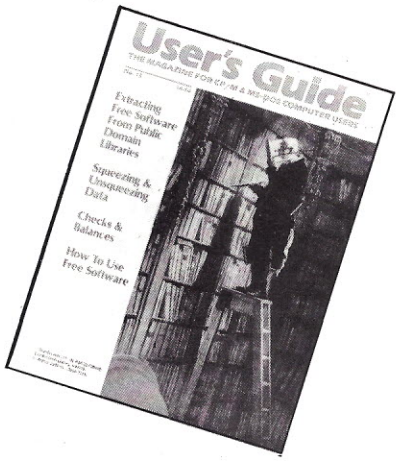

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Osborne Sponsors TeamTennis

TeamTennis selects Osborne Vixen to manage pre-season draft and compute player standings as official computer.

Tennis anyone? Osborne Computer Corporation recently declared affiliation with the TeamTennis™ league, for good reason: an Osborne Vixen is the official computer for conducting the pre-season draft, computing the player standings from match results, and communicating among the nationwide tennis teams.

TeamTennis is the only professional co-ed team sport in which men and women are equally represented.

TeamTennis is owned and operated by TeamTennis, Inc. of New York City. Billy Jean King, ranked world's number one tennis player five times, owner of twenty Wimbledon titles, and many other Champion titles, serves as Commissioner for the 1985 season.

Billy Jean King was the first woman to coach a professional sports team (the Philadelphia Freedoms-World TeamTennis, 1974), and was the first woman to earn more than $100,000 in a single season in any sport ($117,000 in 1971).

These successes may seem moderate, but back in 1966, she was forced to play as an "amateur", when women's tennis was supported by under-the-table payments. The hypocrisy of this pushed Billy Jean into action for open tennis and she founded a player's association (in 1973) that would promote women's tennis on its own merits — the Women's Tennis Association. Billy Jean also founded the Women's Sports Foundation and along with husband Larry King, the magazines, *Inside Women's Tennis* and *Women's Sports*.

A legendary tennis figure, Ms. King declared "The time is right. TeamTennis is making its presence known at a time when more and more people are wanting to be involved in the game at all levels — players, spectators, business, etc. Additionally, TeamTennis, being the only professional co-ed team sport in which men and women compete side-by-side exemplifies the true spirit of 'sportsmania' that is sweeping the nation today."

A team consists of two women and two men players; a mix of both established and new stars. A match consists of five fast-paced sets, including Men's Doubles, Women's Singles, Mixed Doubles, an intermission, then Men's Singles and Women's Doubles. Each game counts as one point, and the first team to capture four points is the winner. If a tie occurs, A tiebreaker or SuperTiebreaker is played to determine the winner.

TeamTennis players wear official uniforms provided by the league, plus the league pays for accommodations, transportation, and one coach per team.

The Osborne Vixen was used to conduct the computer assisted draft, and the computer will be the primary link between the teams for communication, will keep track of all match results, compute the standings — team and individual, determine the prize money payoffs and write the checks not only for the players, but for the officials too.

Ron Brown, President of Osborne Computer Corporation, declared affiliation with TeamTennis and development of a league management package was an extension of their niche marketing and value-added approach to marketing the new Osborne computers. TeamTennis presents a very upscale market, which can profit by becoming knowledgeable about computers and their capabilities.

According to Billy Jean's plans, the Vixen will be the workhorse of the league. "I plan to become computer knowledgeable and use the Vixen in the league office for word processing, filing and financial control."

Below is a schedule of the games this season. All are invited to attend games in their area to see the new Osborne Vixen computer in action.

O

TeamTennis is a trademark of TeamTennis, Inc.

1985 Official TeamTennis Schedule

HOME — UPPER CASE
away — lower case

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
JULY	1	2	3	4	5	6
7	8	9	10 OAKLAND vs. Chicago SAN DIEGO vs. Miami Beach SAN ANTONIO vs. St. Louis	11 SAN DIEGO vs. Boston SAN ANTONIO vs. Chicago LOS ANGELES vs. Miami Beach OAKLAND vs. St. Louis	12 LOS ANGELES vs. Boston ST. LOUIS vs. San Antonio	13 SAN DIEGO vs. Los Angeles CHICAGO vs. Oakland ST. LOUIS vs. Miami Beach
14 SAN ANTONIO vs. Boston CHICAGO vs. Miami Beach ST. LOUIS vs. San Diego	15	16 MIAMI BEACH vs. Boston LOS ANGELES vs. San Antonio ST. LOUIS vs. Oakland	17 CHICAGO vs. San Diego OAKLAND vs. Los Angeles	18 BOSTON vs. St. Louis MIAMI BEACH vs. San Antonio OAKLAND vs. San Diego	19 BOSTON vs. San Antonio CHICAGO vs. Los Angeles	20 CHICAGO vs. Boston MIAMI BEACH vs. St. Louis SAN DIEGO vs. Oakland
21 ST. LOUIS vs. Boston SAN ANTONIO vs. Los Angeles	22	23 ALL STAR	24 SAN ANTONIO vs. Miami Beach	25 SAN DIEGO vs. Chicago LOS ANGELES vs. St. Louis OAKLAND vs. San Antonio	26 ST. LOUIS vs. Los Angeles	27 BOSTON vs. San Diego CHICAGO vs. San Antonio OAKLAND vs. Miami Beach
28 BOSTON vs. Los Angeles ST. LOUIS vs. Chicago SAN ANTONIO vs. Oakland MIAMI BEACH vs. San Diego	29	30 BOSTON vs. Miami Beach LOS ANGELES vs. Chicago SAN ANTONIO vs. San Diego	31 LOS ANGELES vs. Oakland	**AUGUST** 1 OAKLAND vs. Boston MIAMI BEACH vs. Chicago	2 MIAMI BEACH vs. Los Angeles SAN DIEGO vs. San Antonio	3 BOSTON vs. Chicago MIAMI BEACH vs. Oakland SAN DIEGO vs. St. Louis
4 BOSTON vs. Oakland CHICAGO vs. St. Louis LOS ANGELES vs. San Diego	5	6	7	8	9	10

The Delay and the Payoff

This is the May/June/July issue because it was delayed. The next issue will be August/September. Your six-issue subscriptions are not affected by the date anyway — each issue counts as one issue. Whether you've subscribed for six, twelve, or whatever, you'll get the number of issues you paid for, regardless of cover dates.

But the delay couldn't have come at a better time.

We apologize for it, but the delay was necessary if you are of the opinion that the content is more important than a delay of a few weeks. If this were *Newsweek* or *InfoWorld* or even *BYTE*, you'd want to get it on time every week or month. However, we felt the information in this issue was important enough to delay publishing in order to get it right, rather than risk putting out a mediocre issue. We welcome your response on this, and again, we apologize.

But it couldn't have happened at a better time.

The publisher, Osborne Computer Corporation, recently paid off all the claims of the employees who worked in the halcyon days before the bankruptcy. These people have waited since September of 1983 for their last paychecks, and from what we hear about the workaholic atmosphere of the booming/busting OCC, they deserved their checks.

Paul Winternitz

Ron Brown of OCC presents Lee Felsenstein, designer of the Osborne 1 and one of OCC's first employees, his final paycheck.

Anyway, OCC was short of cash after paying off so many claims, so the delay bought them time to sell more computers. As a result the printing of this issue won't hit them below the belt at the wrong time.

So the delay made it possible for OCC to pay off those poor (and some not so poor) former employees, bless their hearts, and still continue its marketing efforts without a hitch. It also made it possible for us to bring you a high-quality issue. Thanks for your patience.

Tony Bove & Cheryl Rhodes
Editors

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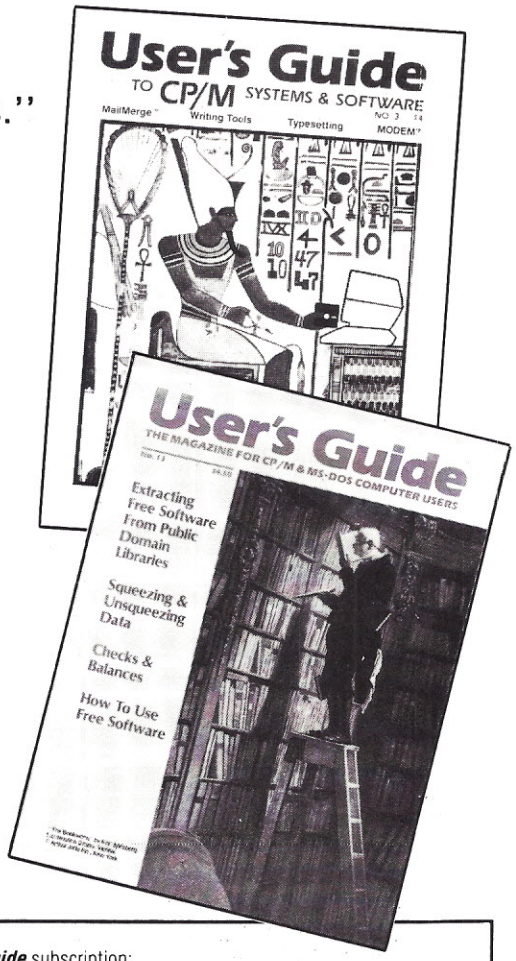

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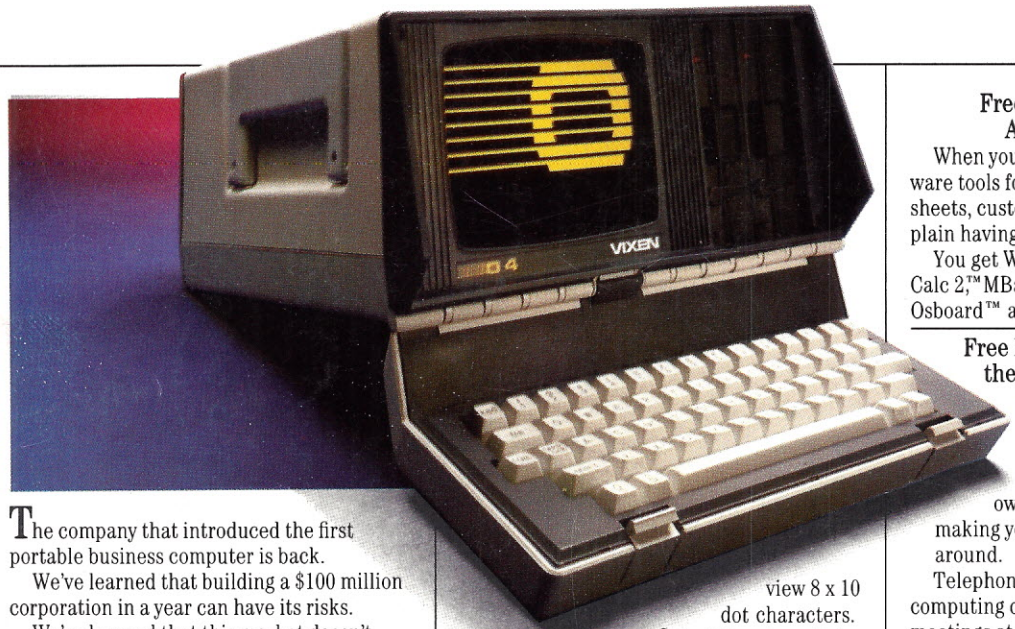
INTRODUCING THE OSBORNE VIXEN.™



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